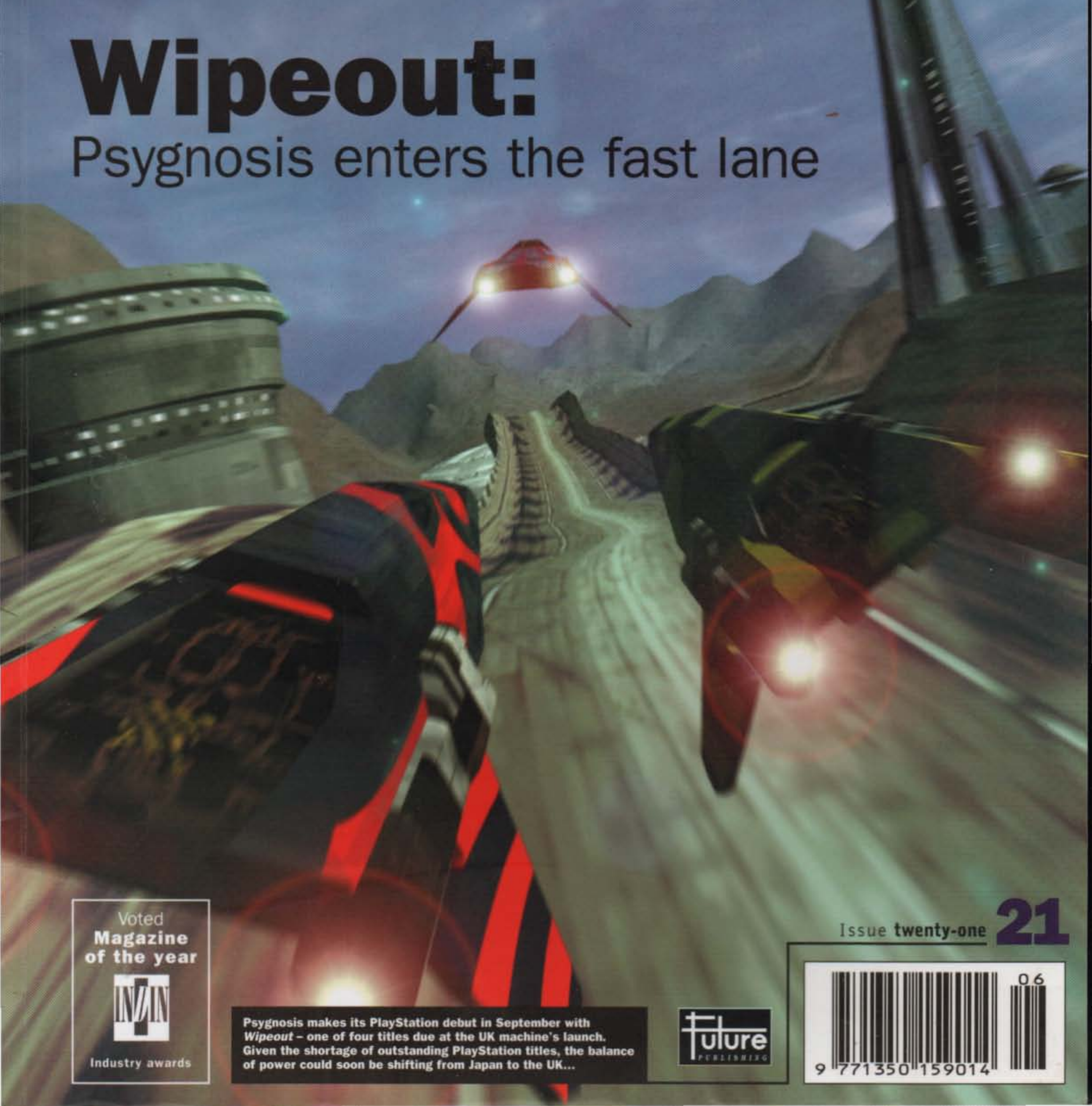
The **future** of **interactive** entertainment

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EDGE

Sony ■ Sega ■ Nintendo ■ 3DO ■ PC ■ Amiga ■ Atari ■ SNK ■ Arcade ■ NEC ■ CD-i

Wipeout:
Psygnosis enters the fast lane



Voted **Magazine of the year**

Industry awards

Psygnosis makes its PlayStation debut in September with *Wipeout* – one of four titles due at the UK machine's launch. Given the shortage of outstanding PlayStation titles, the balance of power could soon be shifting from Japan to the UK...

Issue **twenty-one** 21

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3DO: first among equals?

It's now almost two years since 3DO started flaunting its vision of a global standard. At first the signals were alluring: an intriguing business model, a rollcall of heavyweight adherents, and claims of huge leaps in graphics performance. But what started with a barrage of pre-launch publicity quickly degenerated into a post-launch sham beleaguered by disappointment and unfulfilled promises.

At this point 3DO had simply been a victim of its own confidence. No platform could ever have lived up to such an agenda. But 3DO did well to see that an ugly start didn't taint its longer-term plans. After a successful launch in Japan over a year ago, and with steadily increasing sales in the US and UK, a market has been created and sustained that, with the help of multiple manufacturers, has given the company a head-start on the competition. Getting in the market first has paid off so far – in worldwide terms 3DO has more 32bit systems in households than either Sega, Sony or Nintendo.

But the competition is about to get a lot tougher. As the three rival Japanese companies prepare their assault on the videogames market, 3DO's lead could disappear all too easily. The format's dearth of genuinely outstanding games leaves gaping holes in 3DO's credibility, and some killer titles must be a priority if it is to continue to be perceived as a match for newer systems.

3DO has yet to play its trump card, of course: M2. Trip Hawkins could still have the last laugh…

The **future** is almost here…

inside EDGE issue 21

Voted Magazine of the year
Industry awards

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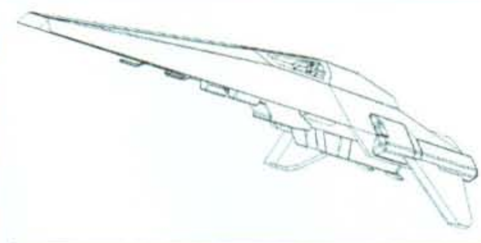
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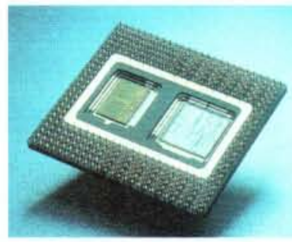


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insideview

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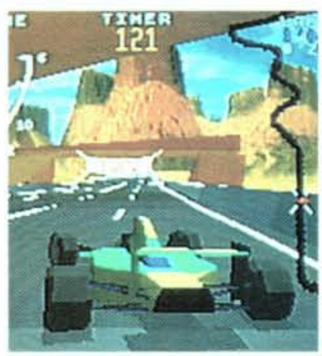




Game Expo (left), the Intel P6 (top right) and the Sarnoff Research Center (see Hasbro story)

23 Prescreen

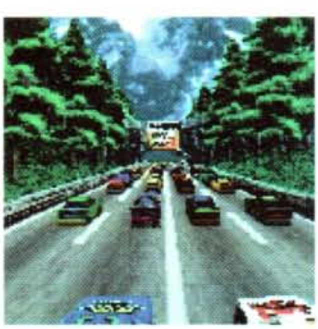


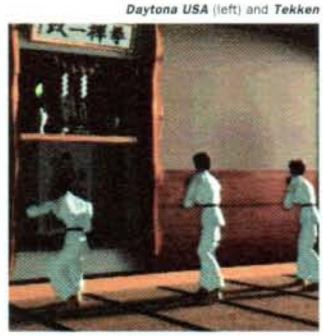


Boxer's Road (left) and **Virtua Racing**

Testscreen 65

Daytona USA (left) and **Tekken**





96 Shigeru Miyamoto



Photography: Antonio Pagnotta da Fonseca

Cutting **Edge**

The latest **news** from the world of interactive entertainment

Home VR: **Hasbro** turns up the heat

Hasbro's 'Toaster' hardware could revolutionise the VR market

HASBRO

Toys 'VR' us: Hasbro has been a major force in the toy industry for decades, but the Toaster project is its first foray into the videogames market

While Sony, Sega, Nintendo and 3DO have been busy incubating their respective consoles, a giant American toy corporation has been quietly hatching its own plans for the future of interactive entertainment. It is already common knowledge that Hasbro, one of the world's largest toy manufacturers, is working on a virtual reality system. **Edge** has now learned that the machine, codenamed 'Toaster', will be a set-top box with performance comparable to the Ultra 64; that it will use Argonaut's *BRender* as system software; and that it is scheduled to appear in the first half of 1996 at a massmarket price.

Toaster will be based on a new custom RISC chip, designed with an emphasis on fast graphics, running the 3D API *BRender* (**Edge** 10). *BRender*'s advantage over its main rivals, *RenderWare* and *Reality Lab*, is that its footprint (the amount of RAM the OS takes up) is claimed to be just 100K. '*BRender* has been designed from the outset to fit into as little memory as possible,' Argonaut boss **Jez San** told **Edge** last year. 'No-one wants to pay to download a large OS time and time again.' This has led to speculation that *BRender* was actually designed specifically for use in set-top boxes.

Toaster is currently a piece of emulation software running on an SGI Onyx-based development system. All the *BRender* OS functions are available but there's no Toaster *C* compiler at the moment (a chip-specific compiler is necessary to produce highly optimised code). Although the development system costs around $180,000, the high price doesn't seem to have deterred either Hasbro or many prominent developers.

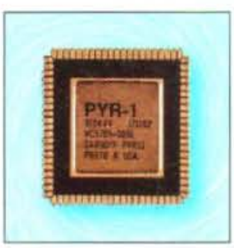
'You'd be surprised to learn how many companies are involved, both in the US and the UK, even at this early stage,' one insider told **Edge**. Microprose, Virgin Interactive Entertainment, Electronic Arts and →



KaiserOptics' Vision Immersion 1000, the larger brother of the VIM 500 used in Hasbro's Onyx-based development kit. The final system is reported to feature a headset with a built-in microphone



The David Sarnoff Research Center in Princeton, New Jersey, is one of the world's leading R&D facilities



Pyramid Processing

The Pyramid (PYR) chip (above) is a product of Sarnoff's research into high-speed image processing. The result is a technique called Pyramid Image Processing – 'a mathematical image-processing technique that dramatically reduces the computational intensity of computer based image analysis algorithms'.

Sarnoff claims that, when complemented by commercial CPUs and DSPs, the PYR can perform a wide range of realtime image-processing applications that were formerly impossible or prohibitively expensive.

While the PYR may not actually be used in Toaster, it shows that Sarnoff is well advanced in the motion-detection, target-tracking and image-alignment technology on which the system will depend.

→ Argonaut are all said to have development systems, and presumably Hasbro has recruited an in-house team.

Ultimately, the success of any VR system depends on the quality of the headset. The development system uses the $3000 KaiserOptics VIM 500 unit, but given Hasbro's long lead time and the rate of technological advance in the VR field, there's no reason why the final unit shouldn't be able to offer even better-quality visuals and more accurate head tracking by the time it goes onsale. Although it would be possible to mass-produce the VIM for around $200 (it is 'potentially inexpensive and of high performance'), **Edge** understands that the final headset will not be derived from the VIM. (Apparently, the headset will be detachable, although the connection will be hardwired into the machine.)

The factor most likely to inspire confidence in Hasbro's system is the name behind the hardware design. David Sarnoff is relatively unknown in the UK, but his pioneering David Sarnoff Research Centre, based in New Jersey, USA, has a formidable list of inventions to its credit, including the NTSC colour TV standard, liquid crystal and, more recently, DirecTV – a new 150-channel MPEG-based satellite TV system for the US market. Current research interests encompass image processing and motion tracking.

In addition, Abraham's Gentile Entertainment (AGE), which has close links with Sarnoff, is known to be involved with Toaster. NES devotees may remember the company's Powerglove, a novelty controller which failed due to lack of software support. AGE is now working on a new Powerglove, presumably to complement the Hasbro unit.

The system is also thought to incorporate headset-mounted microphones and a link-up ability. Many observers are already excited about its potential. 'It's going to be a very good-quality machine with a great many nice little features,' predicted one of **Edge**'s sources.

Set-top boxes are regarded by some as the direction in which videogames should be heading – they offer the convenience of games on demand as well as the potential for large-scale multiplayer gaming. The Hasbro system is likely to operate in a similar manner to satellite decoders in this country, except that it will rely on the United States' extensive cable network rather than a broadcast signal. A smart card will be used to decode programs which are held on a central file server, and to record the amount of time spent using them. Programs will be loaded into the machine's onboard RAM and then played from the box itself.

Hasbro will almost certainly use its own distribution channels for the product, but it will be interesting to see what marketing strategy it adopts. For over 20 years there has been strong antipathy between traditional toy manufacturers and the videogames sector, with toy firms dismissing videogames as a 'passing fad'. It's only recently that they've realised there are huge profits to be made there.

With a projected price of $200-300, the machine could make a substantial impact, especially in the heavily cabled US. But its longterm success depends on Hasbro's commitment. Home VR has been an elusive goal for some time, and whether a non-videogames company like Hasbro can see it through is open to question – other firms which have dabbled in the games industry without any experience in it have found the going tough.

So far, Hasbro is keeping its plans strictly under wraps. When **Edge** contacted the company at its New York office, only the following statement was forthcoming: 'As one of the largest toy corporations in the world, Hasbro's activities are always the subject of much speculation. Hasbro do not comment on a subject until it has been officially announced.' The transatlantic connection was then abruptly terminated at Hasbro's end.

It looks like the reconciliation between toys and videogames still has some way to go...

For 20 years there has been strong antipathy between traditional toy manufacturers and the videogames sector, with toy firms dismissing videogames as a 'passing fad'

Who is it?

30 years ago this man invented a computer control device that has still not been bettered. He was also the first to use e-mail on what is now the Internet, and developed the theory behind Hypertext

Ultra 64 on target for late '95 launch

Final tech specs are now available for Nintendo's 64bit system

it is...

Doug Engelbart, the inventor of the mouse. His preferred design was a knee-driven pointing device, but it proved too tiring to use. He also developed a more efficient alternative to the QWERTY keyboard, but it never caught on

SA-1 chip

The E³ show in Los Angeles – where the Ultra 64 will be shown in action for the first time – is also the venue for an attempt by Nintendo to boost the fortunes of the SNES with a new decompression chip called the SA-1. This 11MHz in-cart processor allows fast decompression of data and boosts the storage capacity of the average SNES cart. Nintendo will have two titles using the chip at the show (both developed by Rare), but the size of some new SNES games is expected to creep as high as 64 Mbits – the same as the first games planned for the Ultra 64.

More information has surfaced about Nintendo's clandestine Ultra 64 programme. **Edge** has obtained both the release date of the system and technical details that shed new light on its performance.

The Ultra 64 will ship simultaneously in the US and Japan on November 21 – the legendary launch date assigned to many Nintendo products, including the Super Famicom, and SFC games such as *Zelda III* and *Starfox*. It's understood that the preliminary design of the casing and joypad are now complete (encouragingly, the design will remain the same in all countries) and it will be first shown running games at E³ in May, as expected.

Nintendo's development hardware has been shrouded in secrecy for months, and the company's furtiveness has obscured the progress it has made on the U64 chipset, which is now complete. Since last month, Ultra 64 developers have received target hardware and development tools running on Silicon Graphics Indys. Previously, U64 developers used emulation software running on Onyx workstations, but it's now known that Nintendo has shipped around 100 final development systems to companies around the world.

According to developers which have received the hardware, Nintendo's system is way ahead of the PlayStation and Saturn, with its forte high-quality texture mapping. The final chipset includes a true 64bit customised version of the R4200 running at 90MHz with a huge 128bit bus. Other chips include a 64bit graphics processor



Angel Studios is rumoured to have at least one Ultra 64 title in development



Nintendo's Ultra 64 will be shown at the Los Angeles E³ show, where it will be displayed in the Virtual Boy enclosure used at WCES (above)

running at 100MHz and a 64bit DSP (possibly on the same chip to save manufacturing costs), also running at 100MHz. Some developers estimate that the Ultra 64's polygon rendering ability is two to three times greater than the PlayStation's, while Nintendo is said to have revealed a ballpark figure of 100,000 polygons/sec (with full graphic effects applied).

While the Ultra 64 programme is gathering speed, software is still an area of prime concern. Nintendo is currently planning to have about 20 titles ready before the end of the year (all weighing in at 64Mbit, not 32Mbit as previously reported), but it's still not known if Nintendo's Kyoto HQ has time to make a major software contribution to the initial roll-out. In contrast, when the Super Famicom was released in 1990, NCL had taken at least two years honing its initial line-up (*Mario World*, *Pilotwings* and *F-Zero*) to perfection. Given the tight schedule, it's likely that Nintendo will instead be relying heavily on the talents of thirdparties such as UK developer Rare (currently working on *Killer Instinct 2* for the system), Software Creations and DMA Design.

M2 support mounts

M2 is attracting big-name companies to 3DO's banner

Following the revelation of M2's final specs [issue 20], news reached **Edge** as it went to press that 3DO is collecting powerful allies as it races toward its fourth-quarter release. With M2 backing already secured from Matsushita and Goldstar, 3DO is now rumoured to have the Dutch giant Philips onboard as well.

Philips has long sought a brand-name position in the videogames market, but the poor performance of the CD-i has led to the company reappraising its tactics. Joining 3DO as an M2 hardware licensee would be an short cut to gaining a massmarket product, particularly in Europe, enabling Philips to launch a new machine without the high costs of developing an original product. Having Philips onboard would also be a great boost for 3DO, particularly as the firm has traditionally worked closely with Sony on industry standards.



This simulated realtime M2 environment gives an indication of the polygon-generating power of 3DO's hardware upgrade

In a separate move, 3DO is thought to be channelling its M2 hardware toward the arcade industry. Given that Sega, Sony and Nintendo have all followed this path, this comes as no surprise. However, if the rumoured involvement of one major Japanese arcade company proves true, it would be a significant feather in 3DO's cap.

It's expected that there will be major announcements at E[3] regarding the future of both the 3DO platform and the M2 technology, which will be showcased at the event.

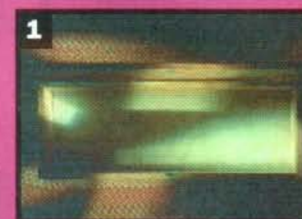


Will Philips adopt 3DO's M2 technology to stay in the game?

Advertainment

This month, Edge's showcase for the art of videogame advertising highlights 3DO's American TV campaign

Company: **3DO**
Product: **3DO**
Date: **Autumn 1994**
Origin: **US**



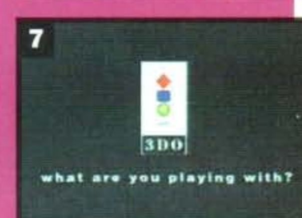












1 The ad opens with an empty wooden box, viewed from above. A simple piano rendition of *Twinkle, Twinkle, Little Star* plays in the background. 2 A SNES is unceremoniously dumped into the box...3 Followed by a Mega Drive and a Mega CD. A voice probes: 'If you're not playing with a 3DO system, what *are* you playing with?' 4 The box lid drops firmly shut to reveal the colourful, stylised legend, 'TOYS'. 5 Brief, MTV-style snatches of various 3DO games follow. 6 Now, as *Way Of The Warrior* plays onscreen, we're told that the system is 'the most advanced home gaming system in the world'. 7 A snappy pay-off line leaves the viewer in no doubt about his inadequacy if he's still using a 16bit system...

ECTS heralds start of hardware war

Four next-gen rivals were present at this year's Spring ECTS



Spring ECTS, held at Olympia, was dominated by Sony, at least in terms of stand size – the company took 4,000 metres² at one end of the hall

The Spring ECTS, Europe's premier computer trade exhibition, recently gave the UK industry its first taste of the impending battle of the new consoles. The show took place at London's Olympia rather than at its regular site, the Business Design Centre in Islington, and was attended by 8500 people over three days. This time Sony dominated the proceedings, taking an enormous stand at one end of the hall to preview the PlayStation and its software, just six months before the machine's arrival in the UK.

Sega, Atari and 3DO all adopted different measures to get themselves noticed. In Sega's case this meant an off-site affair at its London HQ, where the official unveiling of the Saturn took place. After boarding a shuttle bus to the building, visitors were ushered into a dark room filled with dry ice and treated to a presentation featuring *Blake's 7*-style actors and a rising dome contraption which revealed Sega's black console. Sega emphasised the strengths of *Virtua Fighter* and AM2's *Daytona USA* (see page 72), which, although not as polished as many had hoped, still managed to draw the crowds.

3DO took a small booth, relying more on the corporate presence of its hardware licensees (including newcomer Goldstar) to hammer the message home. However, the company had good reason to feel pleased with itself – it won the ECTS award for best hardware. As well as some impressive software demos (see *Bladeforce*, page 37), 3DO gave selected developers an early glimpse of its M2 accelerator. The engineering demos shown on video were 'under emulation' (ie not running from the hardware), but 3DO was adamant that they were an accurate representation of the final graphics throughput. The consensus among those present was that M2's polygon handling is in a league of its own.

You couldn't help feeling sorry for Atari. The company had an average-sized stand with lots of playable games, but it suffered from being in the shadow of Sony's gigantic structure. What was more worrying was the Jaguar's perennial lack of decent software. The polygon beat 'em up *Fight For Life* struggled unconvincingly for attention amidst a plethora of titles that were either too slow or too 16bit in design and concept. Despite this, company boss Sam Tramiel assured **Edge** that there was a wealth of software in development, and evidence →





Virgin's FED-1 space station (above) cost £250,000 and was adorned by girls wearing purple wigs (top). Strange but true

Separated at birth...

The return of a much-neglected series in which Edge explores their bizarre similarities between two games. Is imitation the sincerest form of flattery? Or is it just indicative of a tired industry?



Zelda III: Link's Awakening
Format: SNES/SFC
Publisher: Nintendo
Released: November 1991
Game style: Action RPG
Features: huge map, cute characters
Quality: Imaginative, engrossing Shigeru Miyamoto masterpiece



Speris Legacy
Format: Amiga A1200
Publisher: Team 17
Released: TBA
Game style: Action RPG
Features: cute characters, huge map
Quality: Shamelessly derivative rip-off of a timeless classic



Sony's 'village' included 100 playable PlayStations but only six (mostly quality) games to choose from. Those looking for a glimpse of newer PlayStation games could watch the video wall (*Darkstalkers*, above)





Sony got the message across with a huge video wall and rooms dedicated to individual titles, such as *Ridge Racer* (top)

ECTS awards

- *CTW* marketing award: Virgin Interactive Entertainment
- Software publisher of the year: Electronic Arts
- Innovation award: Bullfrog
- Developer of the year: Bullfrog
- Videogame of the year: *Donkey Kong Country*
Computer game of the Year: *Magic Carpet*
- Hardware award: 3DO
- Most original new title: *Magic Carpet*
- Best reference product of the year: *Encarta*
- BBC *Live & Kicking* viewers' award: *The Lion King*
- *Wired* magazine award: *Doom II*
- *Login* magazine award: *Wing Commander III*

→ of the Jaguar CD's potential was seen the *Highlander* (see page 44).

Sony's expansive (and expensive) commitment to ECTS was a huge PlayStation arena with multiple booths, each dedicated to a different game. The line-up of PlayStation titles was surprisingly familiar, though. Apart from *Starblade* and the massively popular *Tekken* (seen in arcade form as well as running on the console), there were only four other games on display – all of them already released in Japan. However, video-wall demos provided glimpses of other titles in development, including Capcom's *Darkstalkers* (actually coded by Psygnosis), SCE duo *Philosoma* and *Gunner's Heaven*, and a new polygon soccer game from Konami. No announcements were made about the price of the UK PlayStation; although a figure of between £299 and £349 was the widely favoured prediction, the increasingly strong Yen could result in something less tolerable.



Atari put on a brave face but nothing could hide its lack of decent games

Competing software companies had a tough job beating Virgin. Not only did the firm win the best marketing award and blow £250,000 on its futuristic stand (complete with purple-wigged vixens), but *Heart Of Darkness* (**Edge** 20) was the most talked about title of the show. Previewed in a special presentation booth running half-hourly demonstrations, the game impressed those who saw it with the quality of its pre-rendered graphics – although some doubts resulted when sceptics raised the question of original gameplay.

Electronic Arts was more modest about its accomplishments (winning best software publisher of the year among them), but the company had a good range of software to back it up, including Delphine's *Flashback* sequel *Crossfire* (page 30) and Origin's *Crusader* – a superb-looking isometric adventure game. Bullfrog also teased a few journalists with sneak peeks at forthcoming projects, including Peter Molyneux's latest, *Dungeon Keeper*, which looks like another classic for the PC. Fortunately, some things never change...



Inter Space

The Japanese telecommunications giant NTT (Nippon Telegraph & Telecom) has developed a new entertainment environment by marrying virtual reality and PC modem technology.

Called Inter Space, the system allows users to wander around a 3D city, meeting fellow 'cyber citizens' and exploring such silicon-generated delights as shops, schools and videogame arcades. Interaction with other online users is achieved by connecting a microphone and video camera to the access terminal. The system then transfers the vocal communication while projecting a facial video image onto realtime polygons.

Sure beats online conferences...

Sony royalties dispute

The honeymoon between Sony and thirdparty publishers now seems to be over

PlayStation titles look likely to hit the UK market at a price closer to £40 than the £35 goal some had been aiming for. Potential publishers have recently been sent agreements stating that Sony's share of royalties will be DM20 (£9) per unit, a level that could see high-street prices settling at £40-45.

This compares unfavourably to the scenario in the US, where the proposed rate is $10 (£7). And, unlike in the UK, this figure also includes packaging and manufacturing costs, leaving a raw royalty rate of just $7.

'Initially, Sony was really selling itself on the fact that it wasn't going to be like Sega or Nintendo,' says one disgruntled publisher. 'But now it's showing signs that it's going to be just as bad as both.'

Some industry watchers believe that the reason behind the higher-than-expected royalty rates is Sony's desire to subsidise the cost of the machine and fulfil its original massmarket intentions.

But Sony initially attributed the situation to 'wide and unforeseen fluctuations in currency markets which have taken place since the formation of our agreements'.

To placate disaffected publishers, the company is stressing the importance of its software returns policy. 'It's a comfort blanket,' said Sony Computer Entertainment Europe president **Chris Deering** in a recent interview with games industry weekly *CTW*. 'We want publishers to worry more about product and marketing of their software rather than the inventory risk.'

However, that situation may prove commercially unsatisfactory for many, and there is already talk of an opt-out scheme whereby publishers choose to handle their own inventory responsibilities and gain a discount on royalty payments.

Since the news broke, Sony has hinted at changes in the existing publisher agreement. The base royalty charge may yet be reduced by 1-1.5 deutschmarks, and a further volume-related discount could be on the cards. Sony certainly needs to cover all bases if the machine is to achieve the publisher support in Europe that it deserves.



If Sony's royalty terms remain unchanged, games like *Ridge Racer* could prove as expensive as carts

Konami takes Namco route

Konami has finished development of its new PlayStation-based coin-op board, following the signing of a technology licensing agreement with Sony.

The as-yet-unnamed system mirrors Namco's System 11 project, which uses the PlayStation's GPU along with its own custom sound-generation hardware. The chief advantage of such an arrangement lies in the ease of conversion of tried-and-tested coin-op material to the home.

After a relatively quiet spell in the arcades, Konami looks likely to up its output, exploiting the polygon power offered by the chipset to push into 3D territory. The Kobe-based games giant has announced development of three titles, one of which is rumoured to be a 3D instalment of its *Gradius* series and all of which are scheduled to be released on the PlayStation proper shortly after their arcade airings.

Saturn plays catch-up

Sega tries to recapture the glory days of *Virtua Fighter*

Sega recently clarified its 1995 strategy for the Saturn with a Japanese press conference aimed at rebuilding faith in its console. Although Saturn sales were bullish at launch (solely because of *Virtua Fighter*), concern has grown about the system's prognosis – the *Daytona USA* conversion generally received a less than ecstatic welcome in the games press.

After a dubious prediction that the Saturn would enjoy sales of 2.6 million units in its first year, AM2 head **Yu Suzuki** took the stage. He explained the current software development circumstances and unveiled a trial version of a new Saturn OS developed by his team. Running under this preliminary system was a demonstration of the upcoming conversion of *Virtua Fighter 2*, which generated a smoothly animated fighter, manipulated by a joypad.

'At the moment, the situation is that we've developed two characters to the same quality as the character seen on the screen,' enthused Suzuki, pointing to a massive video display. 'If we transplant everything to this quality, the game will be perfect.'

VF2, with its mainly flat Mode 7-style arenas, should fare better on the Saturn than *Daytona USA*, but it will take more than another (admittedly great) polygon beat 'em up to take Saturn into the lead outside its homeland.



The Saturn version of *VF2* (above) is shaping up for a late '95 release

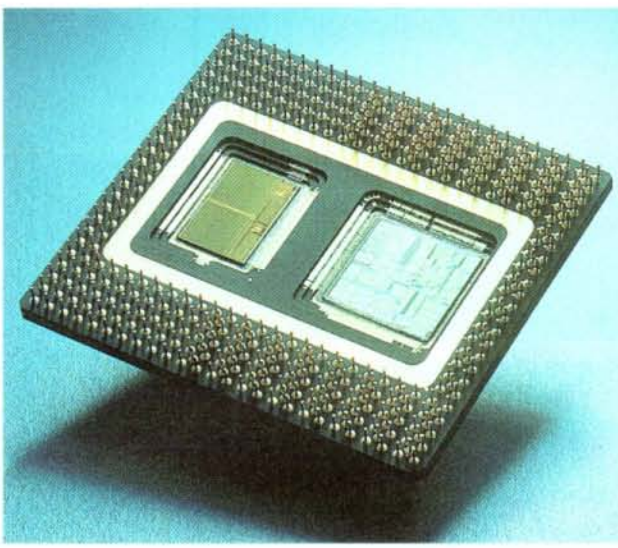
Release schedule

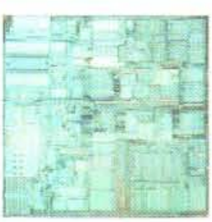
A selection of the 23 Saturn games scheduled for release up to the end of June 1995.

April 28	• *Virtual Hydlide* (Sega) ¥5800 • *Crystal Legend Astal* (Sega) ¥5800
May 19	• *Ultimate Parodius* (Konami) ¥5800
May 26	• *Professional Baseball* (Sega) ¥5800 • *Gran Chaser* (Sega) ¥5800
May	• *Time Space Detective* (Ascii) ¥6800
June 2	• *Battle Monsters* (Naxat) ¥5800
June	• *Pinball Arena* (Kaze) ¥TBA • *Blue Seed* (Sega) ¥TBA • *New Shinobi Legend* (Sega) ¥5800

Intel chip 'twice as fast as **Pentium**'

PC performance continues to improve at a dramatic rate





The P6 is Intel's first RISC/CISC hybrid chip. The increased power is made possible by a process called 'dynamic execution'

The L2 cache is a 256K SRAM package on the same chip as the CPU. The CPU has 5.5 million transistors, but the cache requires 15.5 million to avoid refreshing every 70ns

Intel, the world's largest chip manufacturer, has revealed details of its successor to the Pentium. Named P6, it's a CISC/RISC hybrid designed to break free from the performance limitations of the 17-year-old x86 PC architecture while maintaining backward compatibility. It's hoped that the new architecture, combined with a revolutionary on-chip secondary cache, will double PC performance by the end of the year.

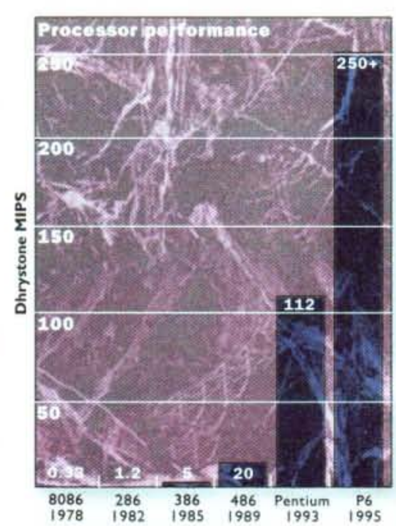
The first version of the 5.5-million-transistor P6 will run at 133MHz and is claimed to be roughly twice as fast as a 100MHz Pentium. This performance increase is the result of Intel's research in a variety of fields. 'Some of the new technologies were proven in mainframe computers, some proposed in academia and some we innovated ourselves,' Intel explained. 'These were carefully interwoven, modified, enhanced, tuned and implemented to produce the P6 microprocessor.'

One of P6's most significant innovations is something called 'dynamic execution', whereby the chip looks ahead in the software it is running and predicts the next instructions that will be required. These are then optimised and fed to the processor before they're requested.

This system operates in conjunction with a 256K on-chip cache of super-fast SRAM. The advantage of combining cache and CPU on one chip is that they share a dedicated bus and therefore operate at the same speed (in this case 133MHz). The disadvantage for Intel is that MCMs (Multi Chip Modules) are expensive to manufacture – although they will lead to lower development costs for clone makers.

The P6 announcement comes as Intel attempts to restore public confidence following the PR debacle of the 'bugged' Pentium. And with rival chip designers AMD, Cyrix and NexGen now making real progress, Intel could soon find itself without the effective monopoly it has enjoyed since the introduction of the PC in 1981.

It's doubtful whether either of these factors will seriously erode Intel's domination of the PC market in the foreseeable future, but its share could be significantly reduced. E



It's humbling to think that people once worked on machines as slow as the 8086. PC processor performance has risen 750-fold in a mere 17 years

New Pentium

To coincide with the unveiling of the P6, Intel has launched its new 120MHz Pentium processor, the first mass-produced chip to be manufactured using 0.35μ technology. Intel claims that this 'will allow the Pentium processor die to shrink to half its current size, which translates into higher performance, higher reliability and lower-cost products for computer users in the future'. The chip costs $935 in 1000-piece quantities.

Intel is currently pushing the 100MHz model as the next standard for multimedia PCs. Later this year it will debut the 150MHz version, after which it is expected to concentrate on the P6.

PlayStation holds sway at Game Expo '95

Sony got its chance to shine at Japan's new software event

Game Expo, Japan's latest games event, took place this spring amidst a frenzy of hype and glitz. Promoted as the first dedicated next-generation exhibition, it was expected to feature the three major players in the field – Sega, Nintendo and Sony – in a head-on clash. But, for reasons of its own, Sega elected to remain absent, fuelling gossip that it was concerned about its ability to compete on the same terms as its peers.

The exhibition was relatively under-attended by Japanese game show standards, with only 49 companies taking floorspace. The reduction in interest could be attributed principally to the decline in the 16bit market – although Japan is suffering less than the West in this respect. Without the glut of SNES and Mega Drive games which has characterised recent shows, the way was clear for Sony to take centre stage, with demonstrations of in-house and thirdparty software accounting for some 60% of the available floorspace.

Unprolific publisher Zoom received the most attention over the show's three-day run, unveiling an almost finished version of *Zero Divide*, its contribution to the burgeoning 3D fighting game scene. Offering robotic characters as combatants, it wowed audiences with *Toh Shin Den*-style graphics but its gameplay failed to impress to the same extent as the Namco game's. 'Unresponsive' was the general appraisal of Japan's beat 'em up-crazy gaming fraternity.

Conversely, *Tekken* covered all bases by delivering both knockout visuals and fast and fluid gameplay. Namco projected the game onto a vast screen during the show and – in typical Japanese fashion – organised several competitions to further build interest in the game that's becoming its biggest PlayStation title yet.

Sharing space with *Tekken* was an early version of *Ace Combat*. The coin-op conversion generates fully texture-mapped backgrounds but, although it runs and plays smoothly, **Edge** found it too slow at this stage of development to be very exciting.

SCE itself presented the finished version of the much anticipated 3D platform title *Jumping Flash*, along with *Gunner's Heaven*. Both attracted appreciative audiences, although the two games are very different: *Flash* is a →









Nintendo's presence was marked by a huge Virtual Boy push. The 'VR' console is still generating a significant amount of interest in Japan



Namco's stand played host to its amazing home version of *Tekken*, but the premier PlayStation softco wasn't neglecting its other glories...

Release schedule

A selection of the 25 PlayStation games scheduled for release up to the end of June 1995.

April 21	• *Crying Oyoyo* (X-ing/Irem) ¥6800 • *Kanazawa Shogi '95* (Seta) ¥9700
April 28	• *Missland* (Altron) ¥5800 • *Gunner's Heaven* (SCE) ¥5800 • *Jumping Flash* (SCE) ¥5800
May 19	• *Pro-Tournament At Senior Girls High School* (Nihon Bussan) ¥6800
May 26	• *Goku Legend* (Arume) ¥5800
Middle May	• *Boxer's Road* (New) ¥5800
End May	• *Master Of Game* (Sunsoft) ¥8900 • *Night Striker* (Ving) ¥6400
May	• *Metal Jacket* (Pony Canyon) ¥5800
June 30	• *Ace Combat* (Namco) ¥5800
End June	• *Arc The Lad* (SCE) ¥5800 • *In The Hunt* (X-ing/Irem) ¥5800
June	• *Rayman* (UBI Soft) ¥5800 • *Kidosenshi Gundam* (Bandai) ¥TBA










PlayStation software premièred at Game Expo included (clockwise from top left): SCE's ambitious RPG, *Arc The Lad*; Namco's conversion of coin-op *Air Combat*, retitled *Ace Combat*; Human's *Hyper Formation Soccer*; stylish shoot 'em up *Philosoma* by SCE; *Wizardry VII*, another RPG (this time in 3D) from SCE; *Jumping Flash*; *V-Tennis* from Super Famicom *Super Tennis* creator Tonkin House; Zoom's attractive but sluggish *Zero Divide*



Among the speakers in Game Expo's conference hall were Bullfrog's Peter Molyneux (above) and Shigeru Miyamoto

→ fast polygon effort while *Heaven* is a traditional dedicated sprite shifter. *Wizardry VII* also gained its first airing and proved that the sombre tones evident in titles like *Kileak The Blood* and *Space Gryphon* aren't the last word in *Doom*-type environments – a bright, vivid palette distinguished the PlayStation continuation of the successful PC RPG series.

The biggest disappointment was the non-appearance of *Philosoma*, a game initially scheduled for release earlier this year. It's gaining almost legendary status now, with the time delay generating high expectations for its mix of vertical, horizontal and realtime 3D shoot 'em up sections. Instead of a playable demo, SCE presented a brief video-wall presentation just to keep gamers' interest piqued until the game's eventual release in June.

Elsewhere, Pony Canyon held the first demonstration of multiplayer linked PlayStation software with *Metal Jacket* and Tomy unveiled a 3D wrestling title with beefy fighters looking remarkably similar to those of *Boxer's Road*.



SCE's very smooth-looking *Jumping Flash* adorned a gigantic video wall



***Zero Divide*'s graphics gained it a sizeable audience of 3D-hungry showgoers**

Nintendo had a strong presence, although no new Ultra 64 demos were forthcoming, leaving consumers waiting until E³ for news of the initial software line-up to break. Instead, Virtual Boy headlined (again), in a dedicated area where 3D projections of new games *Mario's Dream Tennis* and T&E Soft's *Red Alarm* were shown.

Several conferences took place during the course of the exhibition. Bullfrog's Peter Molyneux spoke on the 'imagination of humanities', while Will Wright's address concerned the game design techniques employed on the *Sim City* series – a popular choice among Japanese strategy gamers – and Lou Adams (creator of *Wizardry* and *Ultima IV*) waxed lyrical about plot development.



Publisher New provided playable consoles to demonstrate its sports title, *Boxer's Road* (see page 38)

Essential reading

Data Trash
The Theory Of The Virtual Class



By Arthur Kroker and Michael A Weinstein

It's a measure of the times that virtual reality has now bounded from the pages of specialist magazines into the lap of academe. Teachers of cultural studies have become as insatiable in their appetite for titillating 'novelty' as tabloid hacks, despite the fact that virtual reality is so embryonic in concept and execution that it could hardly be said to be part of our culture at all. Nevertheless, here is a deadly serious-looking book purporting to explore our obsession with cyberculture, the alleged fascination with the disappearance of the human body into virtual reality, and the political economy likely to be engendered by a 'virtualised existence'.

According to Kroker and Weinstein, the virtual age will not bring about an enriched human subject or a better, more diverse society. On the contrary, it will lead to the 'recline of the West'. The working man, groaning under the yoke of pan-capitalism, will be annexed and neutralised in a virtual reality shaped and manipulated by the evil virtual class and other cynical technotopians. This will happen because the authors claim to have identified an incorrigible 'will to virtuality' in the Western population – a desire for immersion in an alternative spatial-temporal perspective. Those who seize the technology can then, while offering the dream of juvenile power, ruthlessly exploit and enslave these enfeebled victims of 'Nintendo capitalism' and glut themselves on the proceeds.

The only apparent ray of hope in this bleak dystopia of 'excremental culture' is the eponymous data trash, the critical minds of the 21st century who resist the fatal seduction of the 'simulacrum' and wage digital war on their fascist overlords. 'When the surf's up on the Net, data trash puts on its electronic body and goes for a spin on the cyber-grid.' Sounds cool, except for the fact that the trash in question probably reads *Big Ones Monthly*, cries to *Stay* by East 17 and lives in Surbiton with his mother.

Although the leaden lit-crit style of this book is frequently impenetrable and in many ways the substance is unoriginal – we know we have a tendency towards escapism that is serviced by films, books, videogames and the like and that these media can inculcate dodgy values – there is a distinctive (if somewhat fanciful) vision at work here. *Mondo 2000* meets Karl Marx in the Trocadero. An ugly scene, but you just can't help rubbernecking.

Datebook

May

Electronic Entertainment Expo (E³) May 11–13, Los Angeles Convention Center, Los Angeles, California. Tel: **+1 914 328 9157**

China International Amusement Machine Show May 20–26, Shanghai Trade Centre. Tel: **+813 3220 2508**

Internet World May 16–18, London. Tel: **01865 730275**. Fax: **01865 736354**

SHOWTECH May 30–June 1, Berlin. Tel: **+44 0171 486 1951**. Fax: **+44 0171 487 3480**

June

Virtual Reality '95 June 6–9, San Jose, California. Tel: **800 632 5537** (USA only); **+1 203 226 6967**. Fax: **+1 203 454 5840**

Asian Amusement Expo June 7–8, Hong Kong Amusement and Exhibition Centre, Wanchat, Hong Kong. Contact show organisers William T Glasgow, Inc, 16066 South Park Avenue, South Holland, IL 60473-1500. Tel: **+1 708 333 9292**. Fax: **+1 708 333 4086**

Taiwan Amusement Machine Exhibition June 22–28, Cetra Exhibition Hall, Taipei, Taiwan. Contact Taiwan Slot Machine, 2F, 17 Pao Ching Street, Taipei, Taiwan. Tel: **+886 2 746 6860**. Fax: **+886 2 746 6875**

TILE '95 June 13–15, Maastricht, Holland. International Conference and Exhibition on Technology and Design in Leisure Attractions and Museums. Contact Andrich International. Tel: **+44 985 846181**. Fax: **+44 985 846163**

July

Virtual Reality '95 June 6–9, San Jose, California. Tel: **800 632 5537** (USA only); **+1 203 226 6967**. Fax: **+1 203 454 5840**

August

Siggraph '95 August 6–11, Los Angeles, California. Tel: **+1 312 321 6830.** Fax: **+1 818 885 4929**

Show organisers: if your show isn't listed here, it's only because you haven't told **Edge** about it. Send details to **Datebook, Edge, 30 Monmouth Street, Bath BA1 2BW.** Tel: 01225 442244. Fax: 01225 338236. E-mail: edge@futurenet.co.uk.

viewpoint



Express yourself in **Edge**. Write to: **Edge** letters, 30 Monmouth Street, Bath, Avon BA1 2BW

Judging from the variety of letters from readers of your excellent magazine, I can't help wondering whether some people are missing the point when it comes to computer games. There seems to be an awful lot of them out there who are content to sit around discussing in minute detail which machine can shift polygons faster, which has the best chips, whether the Saturn can calculate twenty billion blobbybits per second (or is it 19.5, in which case I'll get a Sony), etc. Surely all of the new machines have the potential to deliver the goods, and it is up to us, the gamesplayers, to ensure their success by actually buying and using them.

Take the 3DO, for example. This machine is available in every high street in the country now. People are actually out there enjoying *The Need For Speed*, etc, in the comfort of their own homes as you read this. Okay, *Ridge Racer* may be a bit special and *Virtua Fighter* will no doubt be excellent, but they are a long way from arriving here in significant numbers. Are we to be a nation of console statisticians gaining pleasure from the knowledge that Machine X can do slightly more than Machine Y, or are we actually going to play some games? Support the machines and even better software will follow.

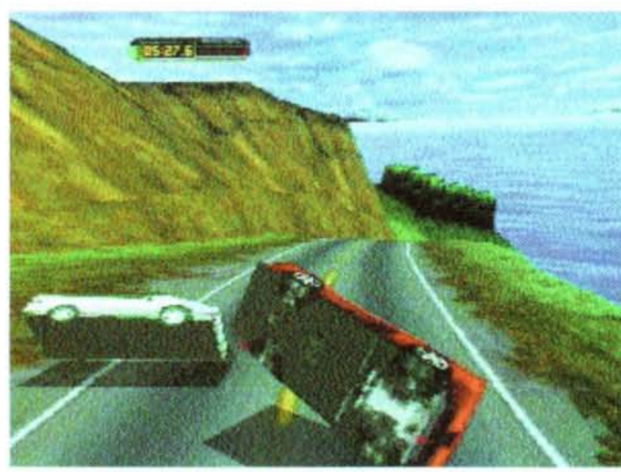
Which leads me to another point. When playing Monopoly, do people sit there commenting on the craftsmanship of the silver dog, or the texture of paper used for the 'Get out of jail free' card? Come on, software houses, if we want to see superbly rendered intro sequences followed by no gameplay whatsoever we might as well watch a video and go for a game of tiddlywinks. I assure you that the FMV and rendering on my VHS copy of *Star Wars* is quite spectacular enough, thank you.

Let's put down the clipboards and pick up our mice and joypads. That's what it's all about. Remember?

Martin Williams, Clwyd

Ah, but even *Star Wars* would look better on Betamax or LaserDisc...

There is a danger of becoming bogged down with irrelevant tech specs, but the fact is that some machines can do certain things better than others, and it's **Edge**'s job to report on their respective strengths and weaknesses. Obviously, playability is the sine qua non, but the superficial aspects of a game are still very important to most people – would you enjoy *The Need For Speed* half as much if it boasted C64-quality graphics? Basically, gamers want to see ever more spectacular visuals, which is what the new machines – to varying degrees – provide. And these visual improvements in turn lead to the development of new styles of games.



The Need For Speed **is widely available right now, so why wait around for titles like** ***Ridge Racer*** **and** ***Virtua Fighter*****? asks Martin Williams**



Edge's Atari feature (issue 18) got a few things wrong, reckons Thomas Holzer

Thanks for the informative article on Atari. You have certainly done your homework this time – I was impressed. Now on to my own ramblings.

1. Bushnell produced home versions of arcade machines long before the VCS came about, for example *Super Pong*.

2. Surely Atari did not threaten to sue developers for the 800 computer. I scanned all my *Antic* magazines from issue 1 onwards and I cannot find any mention of this whatsoever. Atari set up APX (Atari Program Exchange) to encourage anyone to program for this great machine. On the other hand, Atari tried to sue thirdparty developers for the VCS, but soon realised that 'new' companies like Activision (ex-Atari employees) helped to sell consoles.

3. The 7800 Pro console was made by Atari Inc in the Warner days, not Atari Corp. It was the second bestselling console in the US in the 1988/9 period (ahead of the Master System).

4. You should have mentioned the co-operation between Atari

and a 'new' company called Lucasfilm in 1984, developing *Ballblazer* and *Rescue On Fractalus* for the 5200 console. By the way, *Rescue On Fractalus* was the first true 3D game, followed by *The Eidolon* (Lucasfilm).

I would also like to comment on Richard Downs' letter (**Edge** 17). If he thinks that *Mortal Kombat* clones are not the future of videogaming, how come that big companies develop a fighting game for their machine and manage to sell it? Did he read that particular issue between pages 28 and 90? Maybe he's gone home.

Thomas Holzer, Wokingham

1. Conceded. Bushnell entered the home market in 1974 with a version of *Pong*.
2. Atari did threaten to sue 800 developers, although the huge sucess of the Apple II forced a swift rethink.
3. The 7800 Pro was indeed a product of the Time Warner years. **Edge** didn't say that the machine wasn't successful, only that it was a long way behind the NES – as was every other console of the day.
4. There's an infinite number of topics **Edge** could have covered if it had the space. However, without 20 or so pages available, the article was intended to be a broad overview of Atari's fluctuating fortunes rather than a comprehensive history of the company. Regarding *Rescue On Fractalus*: what is your definition of 'true 3D'? *Rescue*'s fractal-generated landscapes were groundbreaking, but 3D had been convincingly realised elsewhere prior to its release.

Fighting games will retain their popularity among gamers for a long while yet – hence the release of games such as *SSFII Turbo* and *Samurai Spirits* for the home. But the beat 'em up's future lies with the likes of *VF2*, *Toh Shin Den* and *Tekken*, not *Mortal Kombat* cloning.

We know you're at the leading edge of reporting on technology in the field of interactive entertainment, but I find it hard to understand why you have now, to all intents and purposes, abandoned the machine that will eventually be the victor when the hype dies down, the dust settles and the battle of the next generation is over. I refer, of course, to the 3DO. Okay, you say, why will 3DO be successful? To answer this you have to look at the PC market, which has grown some 50-60% in the last 12 months. Why? Because of upgradability. PCs are expensive, yes, but they're not nearly as expensive as buying a Master NES, then a Mega Super Drive, then a Mega CD, then a SaturnStation, followed by a SaturnStation II, III, IV and so on – all of which are totally incompatible with the one before.

3DO is less expensive than even an average PC, but as a standalone machine it is more powerful. I am not trying to upset PC owners – if you are into 'computers' the PC is ideal, but if you're a gamesplayer why give yourself all the hassle of incompatibility and command typing, not to mention the expense of PC ownership, when you can buy a 3DO for less than £400 and, when M2 arrives, have a machine five times more powerful than the Sony hypestation is now? Plus, you have that upgradability option, safe in the knowledge that it will work and you won't get 'not enough memory' messages.

Geoff Wiltshire, Colwyn Bay

As a 3DO dealer, you would be expected to back your format, but it is by no means inevitable that 3DO will be the victor. Upgradability in a machine is desirable but it also brings its own problems. On the one hand, it's reassuring for 3DO owners to know that the next level of hardware will not make their current machine obsolete, but such a marked difference between 3DO M1 and M2 could pose difficulties for developers hoping to cross-develop while taking advantage of the hardware in both systems.

The 3DO Company itself admits that its format is just another player in an increasingly competitive field. The machine is of a high enough quality to acquire a large share of the market, but the existence of M2 shows that even 3DO recognises the limited potential of the base system.

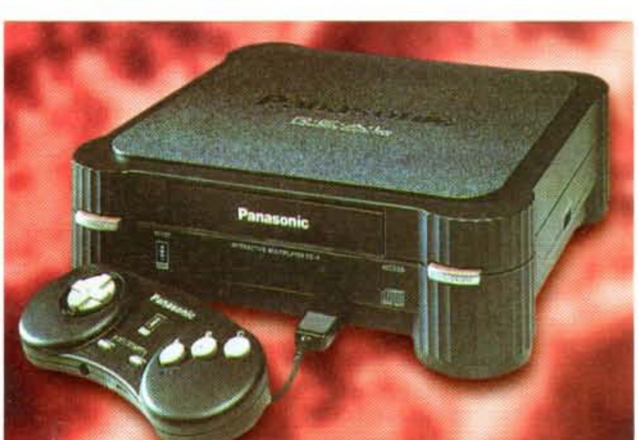


Dermot Smurfit wants to know why Edge failed to acknowledge *System Shock*'s 'real physics environment and absorbing plot/gameplay'

Thank you for being the best. However, I query your failure to dwell on *System Shock* for the PC. This game struck me as being the first truly 'virtual' game with its real physics environment and absorbing plot/gameplay. I suspect that the forthcoming *Quake*'s graphics engine won't be far removed. The CD version is even better, with SVGA and fully spoken text. Although it was initially bemusingly complex, I feel the game deserved more than a cursory glance.

Also, why have we yet to see a decent conversion of *Alien* (the movie) onto a next-generation machine. I'm aware of the forthcoming *Aliens Trilogy*, but suspect it will be another CD borefest (streamed graphics ad nauseam). In these days of mighty polygon shifters, could we not see a game blending *System Shock*'s graphics, *Doom*'s action and *Space Hulk*'s strategy? Have we not all yearned to be in Gorman's shoes as he commands his squad of marines via video link, or tote a hefty smart gun while creeping through the deserted confines of Harker's Hope? Surely some wise developer could do justice to the movie and tap a very devout following? After all, what is *Doom* but an *Aliens* homage? Are you listening, Bullfrog?

As the proud owner of a PlayStation, I can't help but wonder where the promised avalanche of games in the months following its release has slunk off to. Since early January's release of *Toh Shin Den* (Waw!) there hasn't been anything worthy (shambolic *Cybersled*, anyone?). Sony beware: a software drought would cause many potential owners to side with Sega's contender, which seems to have many more name titles waiting in the wings and far more in-house development. Furthermore, where are Psygnosis' PlayStation games? It



Geoff Wiltshire argues that the 3DO is the machine most likely to emerge victorious from the current battle of the formats

Continued next page

viewpoint

Continued

was snapped up by Sony what seems aeons ago, but we have yet to see any releases. Why? What was once a premier 16bit software house (*Obliterator*, *Infestation*) has apparently slid between the waves.

Dermot Smurfit, Exeter

On a fast machine *System Shock* is indeed an outstanding 3D game. Unfortunately, due to the nature of magazine production, things occasionally have to give, be it due to lack of space or a tight deadline. Hopefully, some compensation was afforded by **Edge** 18's coverage of the developer of the game's 3D engine, Looking Glass Technology.

For a look at Psygnosis' first PlayStation games, see the report on page 24.

The PlayStation and Saturn are impressive machines, but why is it that most of the initial titles are so mundane? Although each machine has a flagship title under its belt, what happened to **Edge**'s claim that they had learnt the lessons of 3DO's launch and would duly arrive with numerous strong titles to call upon. After reading issue 19's reviews it would seem that Sony and Sega hysteria is very much premature. The point I am trying to make is that, regardless of the hardware power, both these super-consoles have failed to deliver a variety of outstanding games and are unlikely to for at least another six months. Until then, please clamp down and stop such intense coverage of these platforms until the games warrant it.

Martin Wellbelove, Norfolk

Both the Saturn and PlayStation had one title onsale at launch that, judging by the response of around 300,000 Japanese consumers, was worth buying the hardware for. *Crash 'n' Burn*, 3DO's first title, was a fine game (especially given the incredibly tight launch window) but it lacked the finesse, the cult arcade status and the pre-launch marketing assault of *Virtua Fighter* and *Ridge Racer*.

Sadly, Sony and Sega's post-launch release catalogues have been less than spectacular. With the exception of *Toh Shin Den*, *Panzer Dragoon*, *Daytona USA* and *Tekken*, there has been little to catch our eyes. However, both companies have a large number of titles stacked up for release. A further 33 games – 11 on the Saturn and 22 on the PlayStation – are scheduled for release by the end of May, many of which will make their debut at the E³ show (**Edge** will, of course, provide full coverage). There will always be disappointments in a release schedule, but previewing potentially excellent titles is **Edge**'s job and it will continue to do just that.

I resisted joining the outcry following your Jaguar *Alien Vs Predator* review even though I loved the game. 'Wait until *Doom*,' you advised, and I did.

While both are excellent games in their own ways, I would like to know your views on how easy they are to complete. Is this the trend for the next-generation consoles? At £50 a throw, surely completing games should take a while, not a few weeks on the odd free evening.

On another matter, I was recently looking through some back issues and noticed adverts for 'games testers' (US Gold and Renegade). Now, a career in the computer industry is only handicapped by my lack of programming ability, but a games tester… is this a dream come true? What kind of people do software developers look for, and how much do they pay for someone above tea-making level?

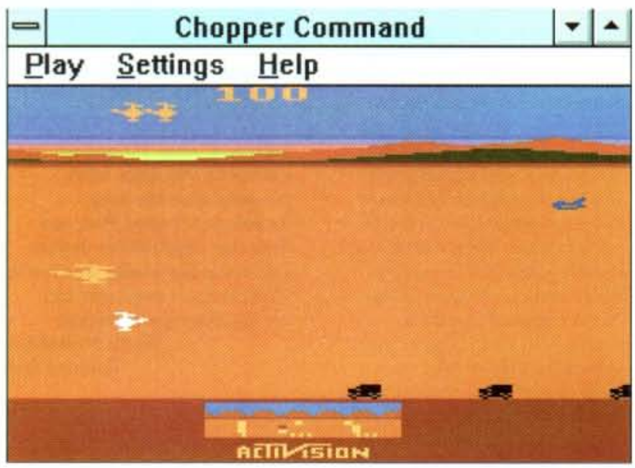
Finally, the current nostalgia for old games/machines has had me thinking about Atari VCS classics. I would now like to buy some of these games, especially *Raiders Of The Lost Ark*. I've tried Telegames and Computer Cavern – any other ideas?

James Lamb, Grantham

If you're paying £50 for a game, you're entitled to expect a considerable lifespan. A playing time equating to £1 per hour is excellent, but it can only be attained with a decent level of challenge, or if the game is so enjoyable that you want to re-play it on completion. *AVP* and *Doom* are both tough games, but in **Edge**'s opinion *Doom*'s challenge is based on fairness and *AVP*'s isn't. It's been said that Japanese games (particularly in-house Nintendo and Sega titles) are easy because the companies wish to retain a consumer-friendly image.

As you can imagine, jobs as game testers are extremely highly sought after. You'll have to demonstrate an obsessive interest in games, strong opinions on what makes a good game, and, of course, a high level of gamesplaying talent. If you possess all those qualities, then by all means apply for jobs, but be prepared for stiff competition. And don't expect to become rich – many employers will assume that job satisfaction is adequate compensation for a relatively miserly salary (a bit like journalism, reallly).

Some smaller shops still stock VCS games. Alternatively, if you've got a PC, you could check out Activision's *Atari 2600 Action Pack* VCS emulator.



Can't get hold of those classic VCS games? Activision's *Atari 2600 Action Pack* for the PC could be the solution (see James Lamb's letter)

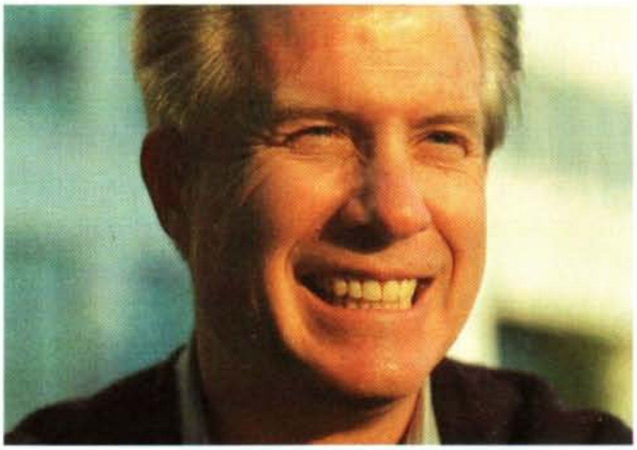
I'd like to share this tale of trouble and woe that I'm still going through at the time of writing. In September of last year, I purchased an Atari Jaguar, mainly because I was fed up with the dross being released on the Mega Drive and could neither wait for nor afford one of the new Sega or Sony consoles. I had immense fun with the Jag until about three weeks ago. I had recently bought *Chequered Flag*, and on returning home from work turned on the Jag to find no sound being produced. I tried everything: all the other carts, another TV, and the RF lead off my SNES. Nothing worked. Rather disgruntled, I took it back to the shop the following day. I was greeted with the news that the distributor, Pulse, had gone bust, and no-one knew what to do.

'Never fear,' said the man in the shop, 'I'll get in touch with Atari, because the machine has a manufacturers' warranty' (12 months in all). Two days later I returned, only to be told that Atari UK had refused to touch the machine. Only Silica or ZCL could handle warranty claims. So off went the man in the shop to discover which distributor had sold my machine to Pulse. ZCL eventually agreed to deal with it.

But ZCL then said the machine has been opened. I hadn't opened it and neither had the man in the shop. Atari hides a little sticker inside the machine that breaks when the machine is opened, and ZCL claimed that this had happened. So, to end this tale, I'm asking for a refund on my Jaguar and the games and buying a Neo-Geo CD.



James Glen has a tale of Jaguar-related woe to tell. It's not our fault, claims Atari UK



Was Tom Kalinske guilty of blatant disinformation in 'a desperate attempt to boost sales of the 32X'? (See letter from Philip Boyle)

In summary, I know Darryl Still reads this magazine, as do a lot of Atari users. So if I were you, I'd thing twice about contacting Atari UK about warranty claims.

James Glen (pissed-off ex-Atari fan), W Yorks

Many large companies (particularly in this country) believe that their job is complete once they've taken your cash. Any further action merely erodes their profit margins and occupies time. In your case, however, it looks like Atari is not to blame. Darryl Still, Atari's marketing manager in the UK, provided this answer:

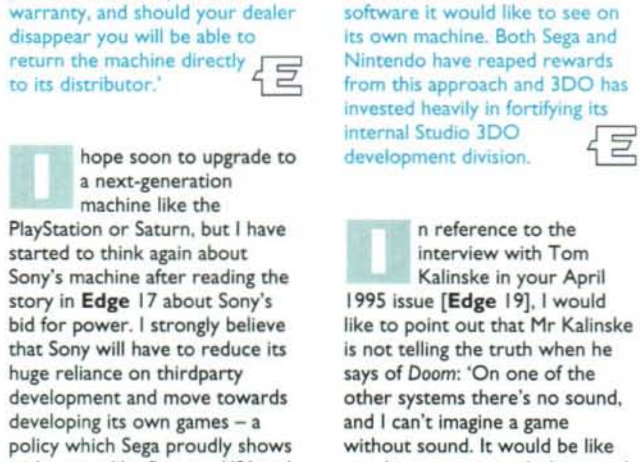
'Atari has a very simple policy on faulty machines. There is a 12-month warranty which means that if the machine goes wrong, the shop should give the owner a new one, the shop's distributor will give the shop a new one, and we [Atari] will give the distributor a new one. This allows us to trace the machine back through source and ensure that it was purchased from an official Atari stock list via an official Atari distributor. This maximises the benefit and minimises the hassle for the user.

'Unfortunately, there are some companies directly importing NTSC machines from the USA, opening them up and altering the components to PAL. These grey imports are not covered by any Atari UK warranty and I'm afraid it looks like James has been unfortunate enough to purchase one of these. If any Jaguar users are worried whether their machine is a UK or US version, the easiest way to find out is to check the colour of the LED next to the on/off button: green is UK; red is US. If you have a US machine than you should talk to your dealer. If your machine is a UK one then you are covered by the above warranty, and should your dealer disappear you will be able to return the machine directly to its distributor.'

I hope soon to upgrade to a next-generation machine like the PlayStation or Saturn, but I have started to think again about Sony's machine after reading the story in **Edge** 17 about Sony's bid for power. I strongly believe that Sony will have to reduce its huge reliance on thirdparty development and move towards developing its own games – a policy which Sega proudly shows with games like *Daytona USA* and *Virtua Fighter*. I would like to say that over the past couple of years Sony's track record in terms of developing its own games has been very poor compared to Sega's. If Sony intends to do battle with Sega it had better start sorting itself out. I think that the Saturn will be a much more successful machine in the UK because Sega had proved with the Mega Drive that it knows what it is doing when it comes to developing its own games. Watch out, Sony.

Gary Osborne, Middlesbrough

Sony's way of compensating for its lack of an in-house development team has been to recruit as many thirdparty developers as possible. This is one solution but (as it claims it is already doing) the company also has to assemble in-house teams to set software standards for other companies to aspire to, and perhaps to realise its ambitions for the kind of software it would like to see on its own machine. Both Sega and Nintendo have reaped rewards from this approach and 3DO has invested heavily in fortifying its internal Studio 3DO development division.



Gary Osborne believes that Sony's lack of an effective in-house team is allowing Sega to steam ahead with games like *Daytona USA*

In reference to the interview with Tom Kalinske in your April 1995 issue [**Edge** 19], I would like to point out that Mr Kalinske is not telling the truth when he says of *Doom*: 'On one of the other systems there's no sound, and I can't imagine a game without sound. It would be like watching a movie with the sound turned off.' I would like to point out the following:

There is indeed sound in *Doom* on this rival system, which is obviously the Jaguar (it is the only other system with *Doom*, excluding the original PC version). There is, as I'm sure you're aware, no in-game *music*. It is a significant mistake on your part to allow a mistake like this to go by unquestioned and then to print it. As it happens, the Jag version does have sound, and good sound at that. It runs in 65,000 colours, as opposed to the 256 colours of the Sega machine's conversion. It also runs fullscreen, with a status bar, as opposed to in a small window.

As for Mr Kalinske's remark, it seems like a desperate attempt to boost sales of the 32X/Neptune system using false claims about his rival's software. If Mr Kalinske cannot tell the truth, he shouldn't say anything at all. I also feel that you had a duty to correct his mistake. It is not, in my opinion, good journalism to let potential sales-damaging/boosting comments which aren't based in the realms of the truth be printed.

Philip Boyle, Dublin
pboyle@maths.tcd.ie

Some of Tom Kalinske's comments were indeed open to interpretation. By 'sound' he obviously meant music, which the 32X version does indeed possess (although it's no great advantage). He also conveniently forgot to mention the lack of a head-to-head link-up mode in the 32X version, and his suggestion that 3DO has only sold 100,000 units in the US sales was pounced upon by The 3DO Company, which maintains that it has sold over 200,000 machines.

But it's hardly surprising that Mr Kalinske sought to emphasise the strengths of the machine he represents while ignoring the assets of rival systems – he was only doing his job, after all. Whether this went over the edge to become shameless manipulation of the truth is debatable. Whatever the case, it's **Edge**'s job to accurately report the comments of people like Tom Kalinske, not to censor them. This allows you, the reader, to form your own opinions, which you then have the opportunity to express in these very pages.

Prescreen

The first UK-developed PlayStation title, Psygnosis' long awaited space racing *Wipeout*, comes exclusively under **Edge**'s scrutiny this month.

Also previewed: the game that Delphine Software has been working on for the past two years – could it be another Gallic classic for the PC?

Plus: a slew of new titles on 3DO, including the exceptionally smooth and fast *Blade Force*; and the first Jaguar CD title, *Highlander*.



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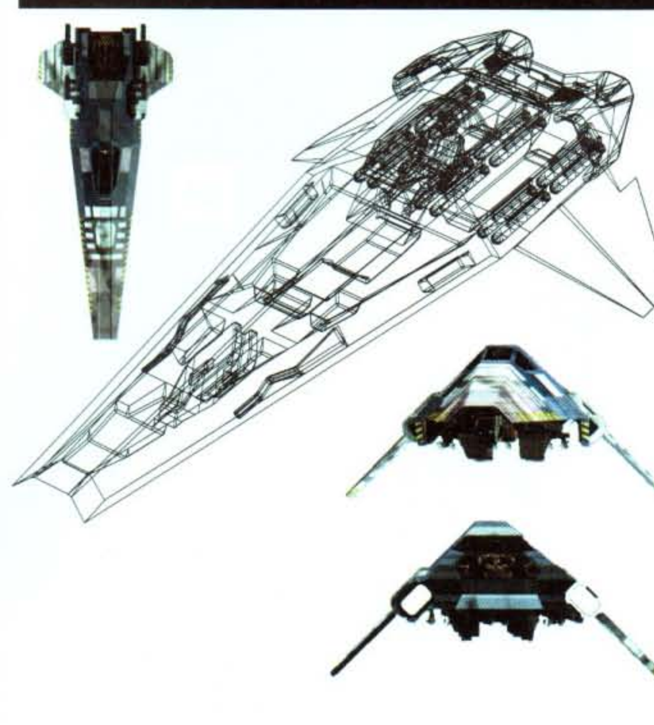








Part of the *Wipeout* team: (back row, left to right) Jason Denton, Darren Douglas, Stewart Sockett, Rob Smith, Laura Grieve and team leader, Nicky Caruss-Westcott; (front row, left to right) Jim Bowers, Louise Smith, producer Dominic Mallinson and game designer Nick Burcombe



Images of *Wipeout*: mock-up screenshots (above) are a pretty fair representation of how the finished game will look. SoftImage SGI software has played a major role in creating the 3D ships and courses (right)



The *Wipeout* racecraft, shown in various stages of evolution (from top): a SoftImage wireframe model; the stripped-down PlayStation version; a flat-shaded PlayStation polygon ship; a fully SGI-rendered vehicle; and the original plastic model, constructed by artist Jim Bowers

Wipeout

Psygnosis' futuristic racer will be available in time for the UK launch of the PlayStation in autumn. **Edge** met the Liverpool crew to see how *Wipeout* could bury the firm's 'great graphics, no gameplay' tag once and for all

With Psygnosis now part of the Sony empire, it's no surprise that the Liverpool softco has had a head start in developing for the PlayStation. By the launch of the UK machine in September, it will have four releases ready – the most prominent being *Wipeout*, its *Ridge Racer*-beater, which was started in earnest last March.

Set in the future, *Wipeout* blends elements from *F-Zero*, *Crash 'n Burn* and the innovative 16bit Amiga/ST title *Powerdrome* to form what, even at this early juncture, looks like being the most exhilarating PlayStation title yet.

To the standard racing theme *Wipeout* adds violently undulating roadways and the option of using weapons against your opponents. The PlayStation hardware enables Psygnosis' programmers to generate *Wipeout*'s stomach-churning visuals in realtime – with a screen update that never drops below 30fps.

Wipeout is the brainchild of artist **Jim Bowers** (the man responsible for much of the rendering in *Microcosm*) and game designer **Nick Burcombe**. 'The idea was to make something very fast with lots of 3D movement,' says Nick. 'A big influence was *Powerdrome*, which was a good idea but didn't have the technology to do it justice, but *Wipeout* is a very different game – there are elements that make it unique.

'The plot isn't really important,' he continues. 'The point is that while you're playing – certainly with the internal view – the bigger the screen the more gut-wrenching the game, once we get the huge drop-offs and the

Continued next page

Psygnosis

rolling around effect. It's more the movement and making the player have real control in the 3D environment, rather than feeling that they're stuck to the surface and not really responding in the 3D space, like many car games'

In *Wipeout*, the player's craft is magnetically suspended in a trench which guides it around the course. Punctuating the track are hills, valleys and jumps – miss one of these and you incur a time penalty, as robotic crash vehicles tractor beam your ship slowly back on to the course.

Like Formula I racing, there are four major constructors in *Wipeout*, each of which sponsors two identical vehicles, with eight craft competing in a race. A points system provides the means of progressing through the ranks.

But as well as the guile and cunning of FI competition,



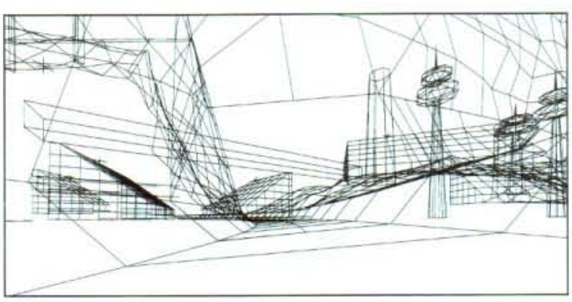
Wipeout relies on other ways of getting ahead of your opponents. 'Weapons play a major part in the twoplayer game,' explains Nick. 'The computer opponents all respond in the correct way – they all have their own styles of combat. The one in the very heavy craft perform a lot of blocking manoeuvres and cutting in front of you, and there's one that's very manoeuvrable, but they're excellent with weapons as well.'

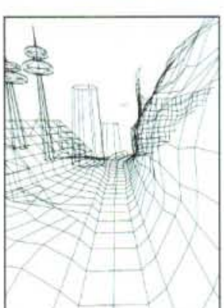
Best of all, though, the game will make use of the PlayStation's serial link capability (the cable is due soon in Japan) for a potentially lethal head-to-head mode.

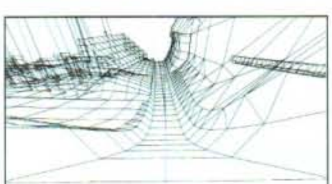




These shots of the first course are mock-ups; however, Edge played an early version of this very track





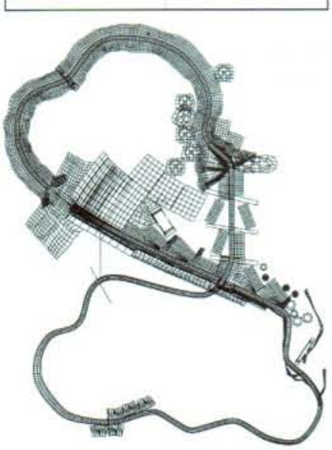


Wireframe course models can be 'flown through' in SoftImage (above) to ensure they work before porting to the PlayStation

Wipeout boasts ten full tracks, split into two racing classes. The first five courses are for amateurs, and allow players to hone their skills before moving up to the next five, which are much bigger and include alternative routes and secret paths.

All of the tracks are first designed on paper and annotated with scenery ideas and course elevations. These are then passed over to the artists who render the course in 3D, using SoftImage software running on SGI systems.

A lot of care has been expended on designing the courses so that they mask the PlayStation's limited drawing horizon. To avoid situations like in *Ridge Racer* – and, to a greater extent, *Daytona USA* – where the scenery suddenly appears in front of you, the artists use trackside scenery and the twists and turns of the course to either hide points where the player can see too far





Each course is first designed on paper by Nick Burcombe (right). A 3D wireframe model is then produced in SoftImage (left), prior to PlayStation conversion

into the distance or to draw the eye away from a point where scenery might appear. A completed course can be 'flown' along in SoftImage to check that it will work without any problems on the PlayStation.

Completed courses are then ported over to the development hardware, using software coded in-house. 'In order to meet the deadlines, people have had to create their own conversion tools rather than using thirdparty tools,' states Jim Bowers. 'I think it's been a big learning experience for the programmers, because they probably know SoftImage completely inside-out by now!'

Time invested in dedicated SoftImage software has proven invaluable, as Nick Burcombe attests: 'The tools also include materials, lighting, texturing – all that stuff is generated for the PlayStation out of our own tools. They are re-useable as well. Stuff like capturing the lighting across the tracks – that's not something we have to get the PlayStation to do any more.'

Producer **Dominic Mallinson** concurs: 'The only thing that's not going through SoftImage is the dynamic play adjustment features, which are specific to bits of the track. Otherwise everything is being modelled in SoftImage.' And SoftImage looks to be a permanent addition to the developer's









Shots of the rendered *Wipeout* sequence produced for the MGM movie, *Hackers*. The hi-res SGI footage doubles as a state-of-the-art videogame played by the film's protagonists

repertoire. 'If your tools are really technical, really programmer orientated,' explains Dominic, 'you can't get the artistic, creative people to design what really looks and feels good – that's the important thing.'

Adding to

the 'look and feel' of *Wipeout* are corporate emblems and logos generated by top design agency The Designers Republic. Their futuristic pseudo-Japanese styling should add considerable dynamism and believability to the proceedings.

Psygnosis also has plans to up the marketing stakes for *Wipeout*. Trackside billboards – like those promoting forthcoming Namco titles in *Ridge Racer* – may well be taken up by real-world advertisers. And several minutes of SoftImage-rendered *Wipeout* footage is the focal point of a game sequence in the MGM movie *Hackers*.



The finished game will sport a variety of trackside billboards – all boasting real-world, paid-for advertising, if Psygnosis' plans come to fruition

Music, too, is more than backseat audio, as **Glen O'Connell**, responsible for UK PR at Psygnosis, explains: 'Sony Music have given us the use of their catalogue, to get a host of different dance bands in the vein of Leftfield, Apollo 440 and so on. We want to get some names behind it, because the plan is to launch a compilation CD at the same time as the game. That sort of thing sells very well in Japan.'

With marketing, music, design and graphics all falling into place, the only unknown factor is gameplay. And from **Edge**'s early taster of the game, Psygnosis seems to have that in the bag as well.

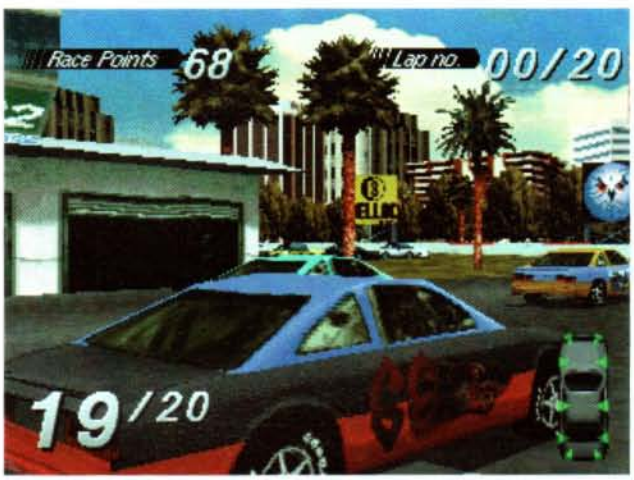
Credits

Producer: Dominic Mallinson
Product manager: Sue Campbell
Team leader: Nicky Caruss-Westcott
Game designer: Nick Burcombe
Concept artist: Jim Bowers
Intro artist: Lee Caruss-Westcott
Graphic artist: Louise Smith
Graphic artist: Laura Grieve
Graphic artist: Darren Douglas
Programmer: Dave Rose
Programmer: Rob Smith
Programmer: Jason Denton
Programmer: Stewart Sockett

Psygnosis

Demolish 'em Derby

Wipeout isn't Psygnosis' only PlayStation title – also on the way is a destructive driving game from Reflections



***Derby* is due to première at E³ in May, where it will vie for attention with a huge array of PlayStation titles from the US, UK and Japan**

Format:	**PlayStation**
Publisher:	**Psygnosis**
Developer:	**Reflections**
Release date:	**October**
Origin:	**UK**







A swamped track (top). The car in front gets T-boned (middle). All manner of replay pans will be included (above)

With technically rich 16bit titles such as *Shadow Of The Beast* and *Awesome* behind it, British developer Reflections is now concentrating on PlayStation and PC software. *Demolish 'em Derby* is a circuit-based driving game for the PlayStation with the emphasis firmly on destruction.

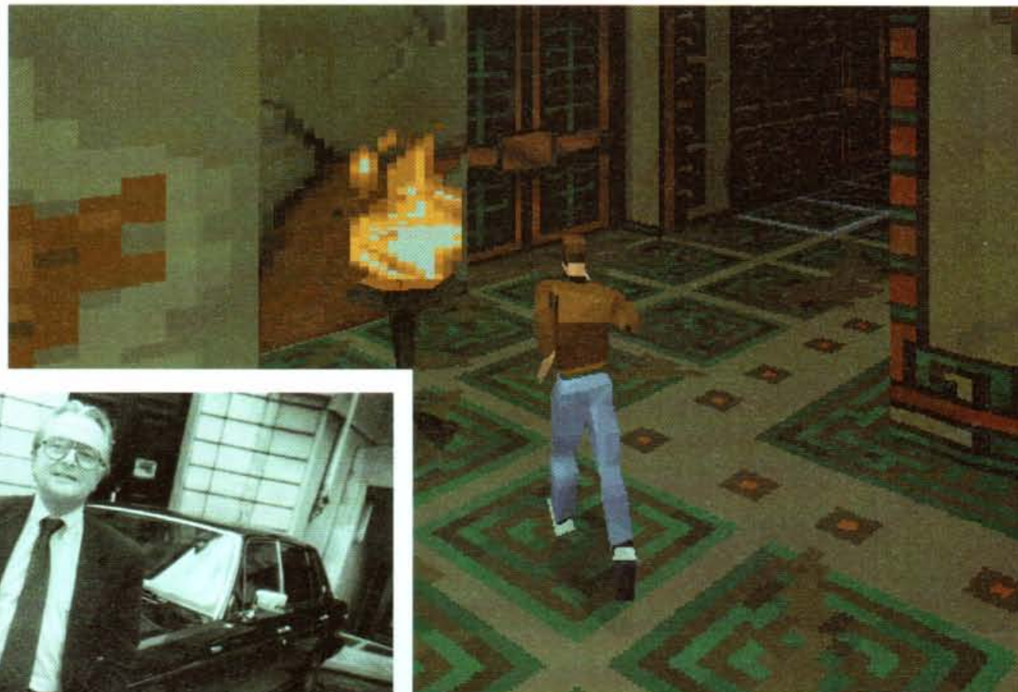
'Unlike *Ridge Racer*, we wanted to keep the density of cars on track very high,' says Reflections' **Martin Edmondson**. 'We're aiming for ten-car pile-ups, and the shortish circuits will lend themselves perfectly to this kind of action.'



Keeping a close watch on your car's damage monitor will be crucial

With a twoplayer linkup option and startlingly smooth 3D visuals, *Demolish 'em Derby* has the potential to trounce *Ridge Racer* when it appears shortly after the PlayStation's UK launch.

'We wanted to keep the density of cars very high. We're aiming for ten-car pile-ups, and the shortish circuits lend themselves perfectly to this kind of action'





Delphine chairman Paul De Senneville (above) made most of his money writing and recording music for easy-listening legend Richard Clayderman; gold discs adorn the walls of the company's offices (right). *Crossfire* is the fruit of the games development arm, Delphine Software







Crossfire

The creators of seminal action-adventure *Flashback* are taking the sequel into another dimension. **Edge** meets the inventive minds behind Delphine Software





The key members of the *Crossfire* team (top), including director Paul Cuisset (far right). Delphine has four professional-quality recording studios (above)

This year is already proving to be a good one for the French games industry. Adeline's *Little Big Adventure* and Amazing Studio's *Heart Of Darkness* have both gained widespread recognition, and now renowned French outfit Delphine is ready to join the throng, with a follow-up to the hugely successful *Flashback*. All three games are prime examples of what the French are best at: pushing back the boundaries of software technology and graphic design.

Established in 1988, Delphine Software International has become one of the bastions of the French games industry. Part of a media empire created by wealthy entrepreneur Paul De Senneville, the games development team sits alongside diverse interests like music publishing, property management, and even film casting agencies and model agencies.

With such a broad range of resources at its disposal, Delphine has implemented a vision not dissimilar to that of neighbouring Parisians Cryo. Rather than treating its staff as plain employees, Delphine prefers to refer to them as 'artistes'. It's an approach that has paid dividends.

Continued next page

Delphine

Delphine carved itself a reputation for innovation with a string of ambitious graphic adventures like *Future Wars* and *Cruise For A Corpse*. But it was Eric Chahi's groundbreaking adventure *Another World* which catapulted the Parisian outfit into the international limelight. This was followed by *Flashback*, created by a team of nine, which redefined the perceived limits of graphics on 16bit systems with its spectacular character animation.



Delphine's motion capture system uses four infrared cameras (above) positioned in the corners of a room



Delphine's Dany Boolauck knows the benefit of good animation

'I don't think the cinematic sequences are that important. They're useful to tell the story, but what is most interesting is the game itself'

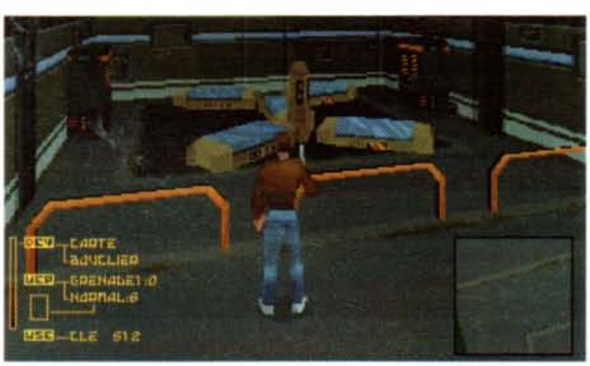
Paul Cuisset, director, **Delphine**

And now Delphine is set to do it again. *Crossfire*, due in September for the PC (and in November for the PlayStation), is the result of the advances in graphics, game structure and production values which have taken place over the last two years. It's the first of a new crop of interactive movies – games that will continue to flourish long after the pseudo-interactive FMV-based titles have withered and died.

Crossfire offers sumptuous cinematics, breathtaking scenery and a thrill-a-minute storyline, all set in a realtime 3D world which you're free to explore at your own pace. Unlike Infogrames' *Alone In The Dark* or Origin's *Bioforge*, the scenery is rendered in realtime, resulting in a feeling of movement that combines the drama of *Doom* and the panache of *Virtua Fighter*.

Delphine's director, **Paul Cuisset** (creator of the 'cinematique' graphics system used in *Cruise For A Corpse* and *Flashback*), is confident that *Crossfire* will deliver a substantially more involving experience than *Flashback*. 'The player is treated differently in this game, and there's more of a story. There's also more dialogue and Conrad isn't quite as alone as he was in *Flashback*. This time there are people that are working with you.'

The game is based on the familiar 'hero vs evil alien race' scenario. It starts with the hero trapped in a prison on a satellite moon; as the game progresses, so the story of Conrad's one-man









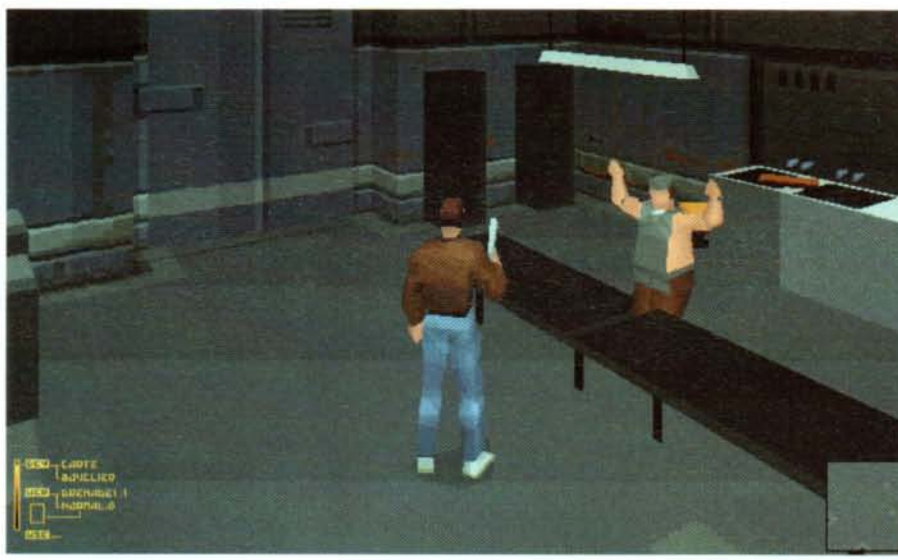
Throughout the game, Conrad encounters alien Morphs in various incarnations, be they disguised as giant robotic spiders (top right and above) or simple prison guards. At the beginning of the game, Conrad arms himself with a basic pistol and a shield. The game runs faster in VGA (left, top left)







In most of the rooms it's not just a case of opening fire at enemies: puzzle elements (top) are also called into play



***Crossfire*'s environment offers a high level of interaction, such as dealing with other characters (SVGA screen above). Delphine used a combination of *3D Studio* and Alias and SoftImage to create the graphics**

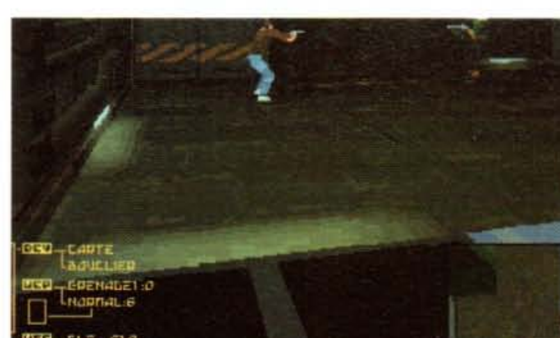
revolt against the Morphs unfolds. Pre-rendered animated cut-scenes usher in each of the six huge levels, giving hints about what you have to do to complete the next level. Some of the objectives are obvious, but the means of achieving them often requires a great deal of lateral thinking. When Conrad escapes from his cell at the very start of the game, for example, he learns that disabling a security camera is a priority if he is to avoid being gunned down by remote-control tracking systems.

Conrad's superb movements are the result of optical motion-capture techniques, as opposed to 'rotoscoping' (direct transfer of videotaped movement to animation frames), which allows him to be placed in any situation, viewed from any angle, and gives him lifelike mannerisms. Whereas rotoscoping can only ever be an exact replay of the original videotape, *Crossfire*'s range of polygon-based movements is unlimited. 'There's no comparison to this kind of technique,' reckons Delphine's executive producer, **Dany Boolauck**. 'We can get exactly the moves we want and it's much more realistic.'

Crossfire manages to maintain a superbly cinematic air without compromising on controllability. Constantly shifting perspectives keep dramatic tension permanently on the boil, while pre-rendered visuals have been kept to a minimum.

'I don't think the cinematic sequences are that important,' asserts Paul Cuisset. 'They're useful to tell the story, but what is most interesting is the game itself. We did think about not putting in the cinematic sequences at all, but in the end we think we have the balance just right.'

Crossfire is undoubtedly the way forward for the interactive movie. Pre-rendered, video-based worlds and scenarios are fundamentally restricted in scope, but *Crossfire* is taking the next step towards the Holy Grail of game development: a product that combines the interactivity of *Doom* with the drama of a Hollywood blockbuster.



Three perspectives are available. On slower PCs, *Alone In The Dark*-style switching viewpoints speed up character animation

EDGE magazine June 1995

Starfighter 3000

So far, the 3DO has failed to produce a captivating flying game. Krisalis could be among the first companies to earn its wings

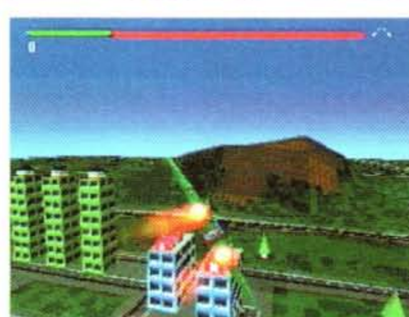
Format:	**3DO**
Publisher:	**Krisalis Software**
Developer:	**In-house**
Release date:	**October**
Origin:	**UK**











The 3D action is fast, smooth and fully texture-mapped. Scenery is drawn to the horizon (above middle). Engage your afterburners for a speed boost (above)





The fly-by camera gives you an opportunity to admire the scenery (top). Fly high for a panoramic view (above)

It's not every day that Acorn programmers get snapped up by rival software houses. But that's exactly what happened when Krisalis Software met the coders of *Starfighter 3000* at the Acorn Expo late last year. Since then, it has taken just three months for the game to be converted to the 3DO.

S3000 combines seat-of-the-pants flying action with a dash of tactics. Adding to its appeal is a true 3D environment with a range of dramatic vertical features: hills, buildings, clouds and even space can be investigated with total freedom. A range of camera angles is also offered, including fly-by and chase-cam – but unfortunately there's no in-ship view, which means that your line of fire is frequently obstructed by your craft.

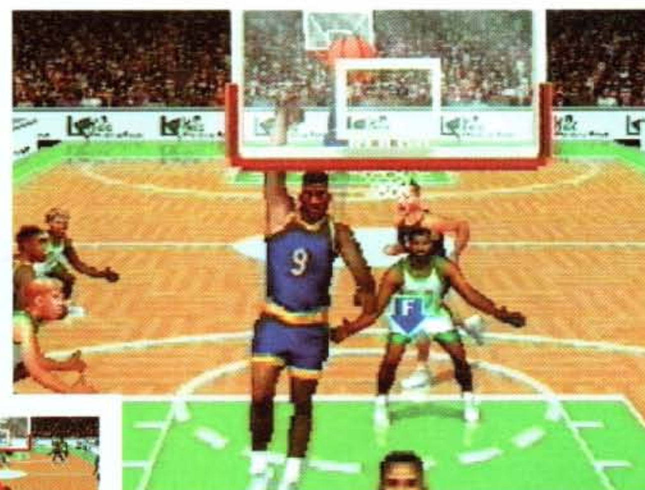
Despite this potential flaw, *S3000* is yet another impressive piece of coding that will do 3DO no harm in the coming months.

Slam 'n' Jam

Crystal Dynamics' first contribution to the sports game genre builds on the 3DO's existing reputation for sporting excellence

In true US TV style, the game includes an almanac's worth of stats, as well as numerous playing options

Format:	**3DO**
Publisher:	**BMG**
Developer:	**Crystal Dynamics**
Release date:	**May**
Origin:	**US**









Scaling sprites are used to impressive effect (above). The game is presented in a zooming end-on perspective (left)



Crystal Dynamics' basketball sim features a polished wooden court, transparent backboards, large sprites and five-on-five action

Crystal Dynamics' maiden sports title, *Slam 'n' Jam*, is not only an attempt to capture a younger audience for the 3DO, but also an obvious assault on EA's domination of the sporting arena.

The game provides a distinctly American perspective on the sport, with US TV-style presentation and an almanac of stats. This, combined with the plethora of playing options, provides an authenticity perhaps only matched by EA's NBA games.

But Crystal Dynamics is concentrating on the post-jump-off action rather than the padding. Each of the bitmapped characters can be scaled with little pixellation to 50% of the screen height; the playing view is locked to a zooming end-on mode; and five-on-five play throughout makes for frantic action. There's also a replay mode with selectable views.

Slam 'n' Jam will provide an early indication of Crystal Dynamics' seasonal form as the company enters a new videogames field.

Bladeforce

The 3DO has no shortage of 3D games, but *Bladeforce* shifts polygons unlike any other title on the format

Format:	**3DO**
Publisher:	**Studio 3DO**
Developer:	**In-house**
Release date:	**Late 1995**
Origin:	**US**





These graphics are an early indication of how *Bladeforce* will look and convey little of its visual sophistication

The accepted wisdom in the videogames industry is that programmers require around 18 months to gain the maximum performance from a machine. *Bladeforce* proves there's some truth in that rule of thumb.

Studio 3DO's Bill Budge (a veteran US games designer responsible for *Pinball Construction Set,* among others) has now been working on *Bladeforce*'s graphics engine for the best part of a year. The results speak for themselves – *Bladeforce* has easily the most impressive 3D engine seen on the 3DO to date. The game initially looks similar to Any Channel's 3D shoot 'em up *PO'ed* (see **Edge** 20) but the ultra-smooth scrolling (running at 30fps) and high-resolution textures distinguish it from its nearest competitor – technically, at least.





This early level (left and above) has dark and moody depth-cued scenery

Studio 3DO has managed to create a graphics engine that is on a par with the best 3D seen on any platform

The central character has a variety of weapons and a range of tactics at his disposal. The specifics of the gameplay are still unclear (so far, the focus has been on honing the graphics engine) but with an environment as detailed yet versatile as this, it should be possible to add virtually any type of action to the game.

With *Bladeforce,* Studio 3DO has proved that it can create a graphics engine on a par with the best 3D seen on any platform. If the internal team can marry some exciting gameplay with its undoubted technological achievements, this year's Christmas smash for the 3DO could already be assured.



At this early stage, the explosions retain that familiar pixellated look

Boxer's Road

The PlayStation launches its bid for sporting glory with a polygon-based boxing game designed to show off the system's graphical punch



Format:	**PlayStation**
Publisher:	**New**
Developer:	**In-house**
Release date:	**May**
Origin:	**Japan**







A left hook about to hit home (main). Boxers' facial details are minimal (above)

Before the bell tolls, the PlayStation-controlled boxer raises his arms in expectation of victory. Thwarting his prediction is very satisfying...

With a vital versus mode, spectacular action and more depth than any other example of silicon pugilism, *Boxer's Road* looks likely to set the standard for PlayStation sports titles

Although shoot 'em ups, driving sims and fighting games have all featured heavily in the PlayStation's diet, the lucrative sports game genre has so far remained largely untapped. *Boxer's Road* will go some way towards redressing the balance when publisher New debuts the game – its first PlayStation title – in May.

Given the Sony machine's polygon prowess, it was inevitable that New would mirror the likes of *Toh Shin Den* and bestow on its boxing title a fully 3D environment. The fighters themselves are collections of Gouraud-shaded polygons, which gives their movements an infinite range and avoids the limitations forced on sprite-based attempts at the sport. The figures have an almost mannequin-like appearance, but the dynamic fashion in which they move quashes any reservations about realism. The flavour of real-life boxing has been achieved with startling accuracy: swing a right cross into your opponent's jaw and his head snaps back with jarring force; back him into the corner and he attempts to duck and roll around your punches; deliver a series of clean blows and he staggers and falters, leaving himself wide open for a finishing flurry.

Few games use the PlayStation's joypad as effectively as *Boxer's Road*. The four main buttons are assigned to













The array of views *in Boxer's Road* is bewildering – one even offers a behind-the-boxer angle, making your fighter's torso transparent. The planned video playback mode should enable all 20 perspectives to be used in replays



The judges offer their verdict (top). The crunching moment of impact, viewed in close-up (inset). On the ropes (above)

jab left/right and hook left/right, while an additional press of one of the shoulder buttons turns all punches into uppercuts (both short and sharp close shots and wider, arcing blows) and other shoulder buttons control ducking and guarding. The result is that fighting is fiercely demanding, requiring a great deal of practice before all of your fighter's actions can be combined convincingly.

Perhaps the most remarkable aspect of the game is the vast number of fight views selectable at any point during a bout. There are 20 in all, from corner post to directly above to even a canvas-level view. Many are of only limited practical use, but their inclusion is an indication of the time and care spent on the project.

Although essentially a beat 'em up, *Boxer's Road* features many aspects that push it into simulation territory. Your fighter can embark on a full career, involving gym training, fight fixtures and tournaments; numerous sparring partners offer their torsos for pummelling in between proper fights, and a scarily comprehensive nutritional plan (featuring protein, fat and sugar levels) has to be monitored in order to maintain maximum performance in the ring.



The boxers' polygon construction is especially evident in their angular shorts (above). Your opponent buckles and says goodnight (middle)

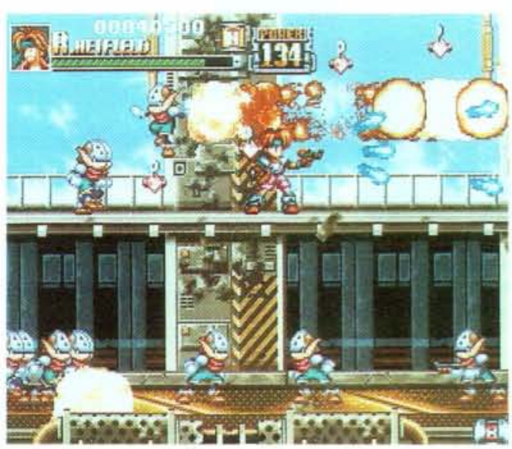
With a vital twoplayer mode, consistently spectacular action, and more depth than any other example of silicon pugilism, *Boxer's Road* looks likely to set the standard for PlayStation sports titles.

Gunner's Heaven

The game is reminiscent of cult Mega Drive title *Gunstar Heroes*, a sideways scrolling platform shoot 'em up renowned for its frantic twoplayer action

Format:	**PlayStation**
Publisher:	**SCE**
Developer:	**In-house**
Release date:	**April 21**
Origin:	**Japan**

Sony Computer Entertainment's latest title is intended to prove that there's still a place for old-fashioned scrolling shoot 'em ups on the PlayStation











Axel and Lucas can collect power-ups (top). A mechanoid ceases to be (centre and bottom)

Polygon frenzy may have consumed many programming houses, but SCE is depending on traditional sprite techniques for its forthcoming release, *Gunner's Heaven.*

The game is reminiscent of cult Mega Drive title *Gunstar Heroes,* a sideways scrolling platform shoot 'em up renowned for its frantic twoplayer action. Basic weapons can be upgraded to give the two characters, Lucas and Axel, increased range and firepower, and ropes and one-off power-ups are also scattered around to add a minimal tactical element to what will otherwise probably be a fairly unsubtle blaster.

The spectacular explosions and detailed character animations will test the PlayStation's 2D abilities to the full. SCE will no doubt be using the limited programming time available to prevent the sprite slowdown seen in *Parodius* and *Raiden.*





***Gunner's Heaven* features spectacular explosions (above inset). The platform-based action is familiar (above). Detailed backgrounds enhance the game's appeal (left)**

The Ring Cycle

10 years after *Lords Of Midnight*, Mike Singleton's Maelstrom team is refining the graphic adventure even further with a title based on Wagner's *Ring Cycle* saga



Voxel landscapes, polygonal characters and picturesque weather conditions combine to give *The Ring Cycle* its visually individuality



Unlike the majority of Mike Singleton's previous efforts, *The Ring* Cycle allows the player control of just one character

Format:	**PC**
Publisher:	**Psygnosis**
Developer:	**Maelstrom**
Release date:	**June**
Origin:	**UK**

Maelstrom ringleader **Mike Singleton** has become associated with epic games. He first rose to fame over a decade ago with the legendary Spectrum adventure title *Lords Of Midnight*, for the now defunct developer Beyond. Since then his Maelstrom team has been responsible for a clutch of ambitious projects, including *Midwinter*, *Ashes Of Empire*, and the soon-to-be-released *Lords Of Midnight 3* for Domark.

The Wagner-inspired *The Ring Cycle* has the same graphics engine as the Domark title – a realtime Voxel based 3D system, albeit with a *Doom*-style engine for interiors – but Mike is keen to emphasise the basic dissimilarities between the two games.

'There's a fundamental difference in what the player is doing from moment to moment,' he explains. '*Lords Of Midnight* is very strategic, whereas this is more akin to single-player RPGs. There's more of an arcade game style of presentation employed on *Ring* too.'

The game revolves around the series of tasks which Siegmund has to

The various tasks are interwoven with a multitude of objects and characters, resulting in a complex web of adventures in which the player can get embroiled



Maelstrom's landscaping system produces very impressive results. Detail and smoothness can be compromised for slower machines



A dragon arcs across the winter skyline. In one scene, the player actually gets the chance to control one of these majestic winged beasts



The graphics engine provides a particularly satisfying depth of field

undertake in order to defeat Anvari and liberate the gods. The various tasks are interwoven with a multitude of objects and characters, resulting in a whole web of adventures in which the player can get embroiled.

Mike Singleton is famed for producing multi-character adventures in which the player gets to direct a band of mythical leaders. 'This is a bit of a departure in that it's very much a single-hero game,' reveals Mike. 'The focus makes it more of an arcade game in some senses. There are, however, moments where Siegmund magically transforms into the other characters – a Valkyrie riding a flying horse, a Rhine maiden, even a dragon.'

Surprisingly, the game's plot doesn't adhere rigidly to that of the opera. 'We've used the same characters and the same objects which crop up in the original story,' says Mike. 'But we decided that sticking too rigidly to it would make it less of a game – the player would always know exactly what would happen next.'

One key aspect hasn't been changed, however: 'If the player actually succeeds in the quest then the hero does die, just like in the opera. It adds a nice twist to the game,' laughs Mike.





Although relatively basic, the bitmapped characters do manage to convey a sense of solidity

Because of the multitude of interwoven strands, the game is far from linear. 'There are various chains of events to enact, but it's not a single pathway game,' elaborates Mike. 'The player has a fairly broad choice of how to approach things.'

With such a free-ranging environment on offer, Maelstrom has hit on an ingenious device to prevent the player straying too far from the plot: occasionally, the voices of the gods chime in, offering help, setting up major quests, and, of course, further enhancing the atmosphere.

In play, the game offers a balance of roaming through the lush 3D environment, communication with the assorted individuals who populate the lands, and close-quarters combat. A RPG-style system is used to fight the major characters, while taking on the more common creatures in the interior locations is presented in a more arcade-style manner.

The final icing on the cake promises to be the sound. 'We're actually using a rendition of Wagner's music,' says Mike. 'It's not the whole thing – that lasts 13 hours! We've concentrated mainly on *The Ride Of The Valkyries* and actually had a fully orchestrated version recorded.' It's rousing, emotive and truly epic – exactly what Mike Singleton and his Maelstrom team have in mind for the game itself. **E**



Interaction with characters from a number of outlandish races is essential in order to make headway

Highlander

Atari's fledgling Jaguar CD system is pushing the console in the direction of classic PC action-adventures like *Alone In The Dark*





Format:	**Jaguar CD**
Publisher:	**Atari**
Developer:	**Lore Design**
Release date:	**June**
Origin:	**UK**



Quentin McLeod, hero of both the film and the TV series, is composed of around 300 polygons. In this section he has to explore a network of tunnels

Following the launch of the Jaguar CD-ROM (see ECTS report, page 10), Atari is now focusing on exploiting the potential of its custom 790Mb format. One of the first games to be released for the system is Lore Design's action-adventure, *Highlander*, the product of a licence agreement with Gaumont Television, creator of the *Highlander* animated TV series (itself based on the cult films starring Christopher Lambert and Sean Connery).

Lore Design is a 15-strong Wirral-based company that has been working on the project with Atari US since May 1994. The game started life as a one-on-one beat 'em up, somewhat akin to *Rise Of The Robots*, but, thankfully, soon transcended that genre. As project director **Steve Mitchell** admits, 'You simply cannot do justice to the world of *Highlander* with a one-on-one fighting game.'

Instead, *Highlander* evolved into an *Alone In The Dark*-style adventure with 16bit pre-rendered backgrounds, polygonal characters, a puzzle element and a coherent plot. In fact, the development process threw up so many ideas that the game will get a staggered release on three discs: the first disc will set the scene; the second will elaborate on the story; and the third will feature a fighting finale.

The game's protagonist is Quentin McLeod, one of the last of a race of immortals on a post-apocalyptic Earth, who has to seek guidance from others of his kind before claiming The Prize – absolute knowledge. Throughout the game, the plot is developed by means of cartoon cut-scenes from the TV programmes.





The range of scenery in the game is impressive (top). Traditional animation from the TV series provides the cut-scenes (above)





Lore employed motion capture techniques to construct and animate the characters, developing custom tools to enable data to be transferred from the capture equipment directly to the Jaguar. Atari is hoping that the resultant smooth, realistic motion will make up for the relatively small number of polygons used for the characters – McLeod himself is made up of only around 300 polygons and can therefore appear rather insignificant at times.



Highlander's backgrounds, which are displayed in 65,000 colours, were all rendered in *3D Studio*. Lore took the original production design from Gaumont and modelled it as a 3D 'set', before using the package to establish camera angles and render viewpoints. Pixel-perfect z-buffering was then added, and finally, the collision detection was programmed in.

The result is a graphical environment that does justice to the storyline. The action-adventure format is one that has served PC developers well, and if Lore can produce a game that captures the atmosphere and gameplay of *Alone In The Dark*, Jaguar owners will be satisfied.

***Highlander* is an action-adventure which offers a compelling mixture of combat (top left) and exploration**



All *Highlander's* backdrops, like this dramatic valley scene, were rendered in *3D Studio* and are displayed in 16bit colour, with the character laid on top. They are all based on locations that have actually appeared in the cartoon

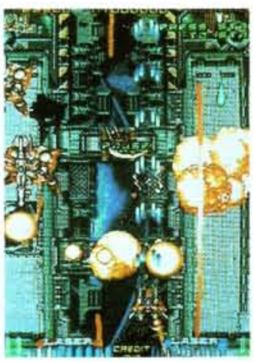


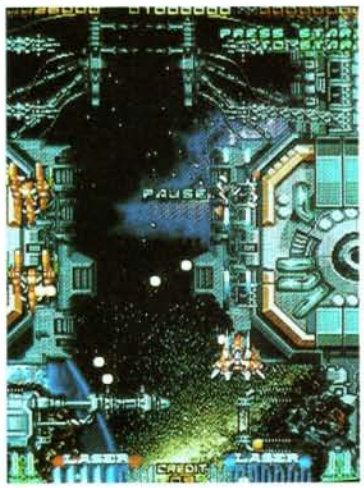


The multitude of viewpoints available (above) gives the game a cinematic quality

Ray Force

Another classic arcade shoot em up is headed for home screens with the Saturn's answer to PlayStation *Raiden*





The standard laser at work (above left). Weapons can be powered up, as indicated by the meter at the bottom of the screen (above right)

Format:	**Saturn**
Publisher:	**Taito**
Developer:	**In-house**
Release date:	**TBA**
Origin:	**Japan**

Many 16bit console titles of this nature have promised to deliver a genuine arcade experience but all have fallen short of the mark

The vertically scrolling shoot 'em up, once such staple videogames fare, is undergoing something of a resurgence, with the likes of Seibu's PlayStation conversion of *Raiden* and now Taito's *Ray Force* on the Saturn.

The 18-month-old coin-op had praise heaped on in Japan, although it never made it to UK arcades in large numbers. The action is set in a space environment and allows for twoplayer simultaneous play, as well as the usual assortment of deadly weapons.

Many 16bit console titles of this nature have promised to deliver a genuine arcade experience but nearly all have fallen short of the mark. However, with the Saturn's powerful sprite handling abilities on tap, a perfect conversion of *Ray Force* should be possible – if the version seen at the recent Japanese Game Expo is anything to go by, it already looks like Taito has a winner. **E**





The blue homing laser proves to be the most powerful component of your limited armoury (top and above)





***Ray Force*'s backgrounds don't feature as much variation as *Raiden*'s, but the gameplay is more tightly structured (top and above)**

Virtua Racing

The Saturn is the latest Sega machine to acquire a version of the company's ground-breaking coin-op racer



All three coin-op tracks – including Big Forest (above) – appear in TWI's conversion, with faithful trackside objects (albeit with lowered detail)



Virtua Racing's famous four 'virtua' viewpoints are set to make it to the Saturn intact, from in-car, complete with polygonal driver's hands (top left) to the detached but all-seeing view four (above left)

Format:	**Saturn**
Publisher:	**Time Warner Interactive**
Developer:	**In-house**
Release date:	**TBA**
Origin:	**US**

Sega's seminal polygon racer, *Virtua Racing*, is slowly drifting Saturnwards, courtesy of Time Warner Interactive. Rather than embarking on a direct translation of the coin-op, however, the company's in-house development team has – as Sega itself did with its 32X update – elected to ramp up the number of selectable cars and tracks, as well as add numerous general enhancements.

Five vehicles are available for selection: a standard F1, an F160, a GTP, a coupé, and even a diminutive go-kart, with the option to customise your chosen car. The three coin-op circuits are joined by seven new ones, entitled Amazon Falls, Pacific Coast, Metropolis, Diablo Canyon, Alpine, Surfers and Speedway.

Like Saturn *Virtua Fighter*, *Virtua Racing* will have a lower polygon count than its arcade parent. The early version **Edge** has seen was impressively smooth, although object popping in distant scenery components was as much in evidence as in Sega's conversion of *Daytona*.

Despite the age of its progenitor, the Saturn version of *Virtua Racing* will no doubt prove very welcome to the many hardcore racing game fans who still regard it as a superior drive to *Daytona USA*.



The polygon count for the individual cars is surprisingly high

Five vehicles are available for selection: a standard F1, an F160, a GTP, a coupé and even a diminutive go-kart



3DO: The story so far

3DO: The story so far



3DO: The story so far

The Panasonic FZ 10



Manufacturer:	Panasonic
Price:	TBA
Release:	May

Panasonic's remodelled 3DO base unit, the FZ-10, appeared in Japan last year, its sleek new lines and competitive price ensuring that interest remained buoyant in such an important territory. Completely restyled, the machine's biggest change lies with its CD system – the front-loading tray mechanism has been replaced by a less costly lid system.



The AV expansion port which appears on the right side of the machine (above) will accept the eagerly awaited M2 accelerator, resulting in a snug-fitting Mega Drive and Mega CD look. The FZ-10's power switch (right) has been shifted around from the front to the left side, for no apparent reason





Panasonic appears to have gone backwards rather than forwards with the redesign of its 3DO – the FZ-10 has a look strangely reminiscent of NEC's ageing PC Engine Duo console. Access and power LEDs remain largely unchanged



The rear of the machine holds few surprises, but there's no RF socket in evidence. From left to right: de-bugging/country code protection switch (available on press and development machines only), S-VHS port, composite video and audio (l and r) ports, expansion port, power cable socket

3DO: The story so far

It was the best of things. It was Trip Hawkins' baby and it was the future of videogaming. When details of the 3DO format and screenshots of selected titles began to appear in the games press in late summer 1993, it seemed as if the videogames world was finally on the brink of that oft-discussed utopia – the industry standard.

It was the worst of things. Within a few short months the pre-launch hysteria was followed by post-launch disappointment. Many who had subscribed to the 3DO vision were left with a bad taste in their mouths and bad jokes on their lips – of which '3 Dozen Ordered', '3DOA' and '3Doh!' were the most viciously funny.

But all proved to be wide of the mark. Despite the rollercoaster ride 3DO has experienced since its conception, reports of the system's demise have been greatly exaggerated. Worldwide sales of well over half a million units to date show that 3DO is alive and – in some respects – kicking.

The eventful, headline-grabbing history of 3DO can be explained by what Americans call 'The Vision Thing'. Bill Clinton had it; George Bush didn't. Trip Hawkins had it and set about building the entire 3DO format on his own personal 'vision thing'. The concept appealed to everyone. A standard akin to VHS or CD audio, a huge performance leap from 16bit and the support of major players like EA, Matsushita and AT&T. Then there was Mr Hawkins himself. He had made Electronic Arts the biggest entertainment software company in the world; if anyone knew the games market, surely he did. Finally, there was the software. Screenshots of EA's *Shockwave*, Crystal Dynamics' *Crash 'n Burn* and other dazzling-looking games were like manna from heaven to an audience tired of the clone-u-like 16bit software scene. Little wonder, then, that 3DO needed no help in selling the vision.

'People built up the hype around us without us actually having to say anything,' explains 3DO Europe's managing director, **Bob Faber**. 'We spent a lot of time trying to calm down people's expectations, saying "Wait a minute, this doesn't happen overnight, it takes time". One of the reasons why we had to launch early was because we knew it would take a long time to get established.' But Faber admits that 3DO couldn't possibly have lived up to people's initial expectations. 'We knew it was a risk, we knew we didn't have enough really great software but we had to do it.'

18 months down the line, the 3DO vision is still strong; according to Faber it's only short-sightedness that has led people to write off the system. 'The thing that we've done that people fail to realise is that we have taken a really big lead in this generation when we weren't even on the map two years ago,' he argues. It's certainly true that while 3DO was busy building a market for itself, its competitors stole publicity from under its nose. Itself a sour indictment of the fickle videogames industry, 3DO has been subjected to over-the-top hype followed by over-the-top criticism. Now, the company believes, such difficulties are in the past.

The birth pangs of 3DO are over and now the format faces its biggest challenge with the impending arrival of the Sony PlayStation and Sega Saturn. It's a challenge that all concerned with 3DO feel they're ready to meet. 'I think that 3DO can compete favourably,' reasons Panasonic UK's general manager, **Bob Tate**. 'It's going to be tough – our competitors are big, responsible companies and they will make an impact on the marketplace. We'll move from a position where we have a product that is relatively unique to one where there is much closer competition.' 3DO may not have the market to itself for much longer but its conviction is still strong and it's this that will decide the system's future more than anything else.

'People built up the hype around us without us having to say anything'

Bob Faber, **managing director, 3DO Europe**

Sony, Sega and Nintendo are playing a game that the interactive entertainment business knows and, for better or worse, trusts in varying degrees. In the console industry ('the toy model', as Trip Hawkins dubs it), a piece of hardware is flogged for a limited timespan and then dropped in favour of a new machine a few years later. 3DO's strategy has established a freer, more democratic market. Faber insists that 3DO's lower development costs and potential for greater profit margins is the way forward for the industry as a whole and a crucial factor in the company's strategy.

However, Bob Tate freely admits that this approach has left 3DO looking less dynamic than Sony and Sega. 'In the short term, I think it's fair to say that it makes life more difficult, as from startup a single company can be very dynamic. However, I think you'll see where more people are involved in a wider range the benefits escalate accordingly. You get a slower start but a faster second phase.'

For Tate, the 3DO vision is something that both the industry and the consumer have to get used to. 'Expectation is on a fast turnover in product. That isn't our style and both the customer and ourselves are having to get used to where that leads us. Us in terms of having to move more quickly to upgrade and develop and the customer in terms of looking at something that provides him with longterm stability.'



Goldstar is the only manufacturer to alter 3DO's much-criticised joypad design

The word 'longterm' crops up with revealing regularity when any of the major companies involved with 3DO discusses the system. The combination of a large number of manufacturers and scalable, constantly evolving architecture remains the bedrock of 3DO. 'When you think about 3DO it's much better to think about it the way you think about a PC as a foundation and not as a point product like a videogames system,' explains Bob Faber. 'We know we can extend the product and have it evolve through time; they already know that they can't do that with theirs and they're willing to make a point product and replace it with something else later.' With the PC totally dominant in the computer market, it's a comparison that 3DO is keen to play up.

Sales of over half a million units are significant but, as Panasonic and 3DO are happy to admit, it's still strictly early-

Continued next page

3DO: The story so far

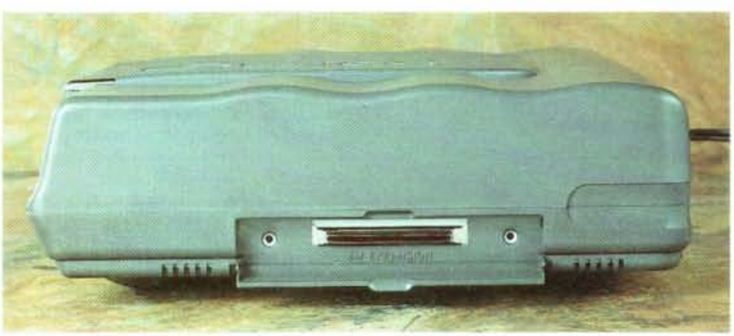
The Sanyo **TRY**



Manufacturer:	Sanyo
Price:	¥54,800 (£385)
Release:	Available now (Japan)

The Sanyo machine is currently only available in Japan, where the Japanese company is also publishing its own 3DO software. With its sleek, curvaceous lines, it's arguably the best-looking of the three available 3DO systems.

Taking a hi-fi separate as its inspiration, it features a front-loading CD tray which, rather than just acting as a caddy to transport the disc into the machine, actually houses the drive mechanism itself. Sanyo has yet to announce its launch strategy for the US and Europe.



A side-on view of Sanyo's TRY machine (above) reveals a rippled styling which is completely at odds with the rest of the family's straight, clinical edges. The standard AV expansion port (for M2) lies beneath a plastic cover





The rear of the Sanyo TRY machine is clean, uncluttered and much the same as all the other 3DO models. Left to right: expansion port, S-VHS port, composite video port, audio (left and right) ports, power supply cable.



adopter numbers. However, it's worth remembering that the Mega Drive only sold 150,000 units in its first year (and also received a less than emphatic welcome from the press) but still went on to capture the lion's share of the 16bit market. What is there to show that 3DO can make it to the big sales league? On the hardware front, 3DO's principal strength is that it has partners big enough to absorb the high initial costs and relatively low turnover in the early life of the format. Panasonic, part of the $60 billion Matsushita conglomerate, and Goldstar, a brand of the $40 billion Korean Lucky Goldstar Group of Companies, are both committed to the format. 'Matsushita's not a company to back off from an investment,' says Panasonic's Tate. 'It is very early days



Trip Hawkins' alma mater, EA, has distinguished itself in the 3DO software business with games like *John Madden*

with the product and to us it's a longterm product. In five years we would see it as a mainstream entertainment product.'

After Sony broke with Nintendo, it decided to go it alone and create its own format from scratch. In contrast, 3DO has given Panasonic, Goldstar and other manufacturers like Sanyo a low-risk opportunity to buy in to a format which has already undergone the expensive development process and has the potential for greater things. It's something that Goldstar UK's **Andrew Chorzelski** recognises. '3DO has offered us a relatively quick gateway into the market. When we looked around at the technologies available at the time, 3DO gave us the most advanced and upgradable system.' Despite its initial concept of a multimedia player, Goldstar is keen to promote its machine as a games-plus format, even including a free Kodak Photo CD voucher in its launch bundle. 'Games, first and foremost, remain the reason anyone buys a 3DO. But if you're spending £400, the consumer has the right to expect the machine to grow with them,' argues Chorzelski.

After keeping a very low profile at first, Matsushita appears to be finally putting some money behind 3DO with a $15 million advertising campaign scheduled for this spring in Japan – a market where 3DO performed better than expected with sales of around 360,000 units before Christmas 1994. But a planned Panasonic MPEG I add-on for the 3DO has been delayed. 'There is so much confusion now that what we want to do is provide something that is front and back-end compatible,' explains Tate. A much more important factor in 3DO's longevity will be M2, a very powerful graphics engine which should raise 3DO's capabilities way beyond those of its immediate rivals.

However, 3DO itself is downplaying M2. 'I don't think that this year is a commercial event for M2,' says Faber. 'This year M2 is a showcase to prove that the foundation strategy is the right thing.' It's known that 3DO will make both major hardware and software announcements about M2 at E³, but right now the company is playing its cards close to its chest (it's understood that a roster of M2-powered coin-ops and original titles are already under way). Thus far it seems that 3DO is using M2 more as a spoiler than anything else. Sweet revenge for the drip-feed of PlayStation and Saturn details that Sony and Sega supplied throughout the 3DO's first year onsale.

'This year M2 is a showcase to prove that the foundation strategy is right'

Bob Faber, **managing director, 3DO Europe**

Whatever the future holds for 3DO hardware, the present price of the system severely limits its potential audience. 'It is still the specialised gaming market rather than the more mainstream games/family entertainment market,' admits Tate. It remains to be seen if Sony or Sega will be pricing their consoles to appeal to a wider market, but right now 3DO is only hitting a few, wealthy punters. 'We're not appealing to the traditional early- to mid-teens market,' claims Goldstar's Chorzelski. 'The mean age seems to be 25-26. He's PC literate, has access to more than one videogames system and doesn't consider himself a "gamer".' Goldstar, Panasonic and 3DO itself are confident that, ultimately, their machines will break through to a wider audience (UK sales are around 20,000 units so far) and hardware prices will fall accordingly. 3DO has scope to reduce the



Samsung revealed a working 3DO prototype at the Chicago CES in mid-1994. Like AT&T, the firm is adopting a 'wait and see' approach

cost of its hardware, and it is expected that the company will be undercutting its competitors when they launch this autumn.

The seeds

of longterm success are certainly there in the hardware but 3DO also needs something that has been relatively thin on the ground since the machine's US launch in September 1993 – high-quality, original software. The old adage that software sells hardware still holds true and the quality of the 200-plus 3DO releases has, until now, been patchy. If anything has thrown doubt on Trip's vision, it's the fact that, after 18 months on sale, there are only a handful of 'must have' titles for the 3DO. The software house most identified with 3DO in its early days, Palo Alto-based Crystal Dynamics, has performed sporadically: flashy original titles like *Crash 'n' Burn*, *Total Eclipse* and *Off-World Interceptor* have been nothing more than short-term temptations, but faithful conversions – like the Neo-Geo classic *Samurai Shodown* – have been well received.

Trip's alma mater, Electronic Arts, has distinguished itself, turning out a series of innovative, challenging and visually enticing games. *Road Rash* and *John Madden Football* were ground-up conversions that went way beyond the 16bit originals, and while *The Need For Speed* wasn't quite *Ridge Racer* or *Daytona*, it still gave good wheelspin. With *FIFA Soccer*, EA really moved the goalposts and produced the 3DO's first worthy game – in the UK, it's been selling practically at a one-to-one ratio with the hardware. (The title is held in such high regard that Goldstar is bundling it with its UK 3DO, which arrives in May.)

Bob Faber is characteristically candid about the slow flow of decent titles that

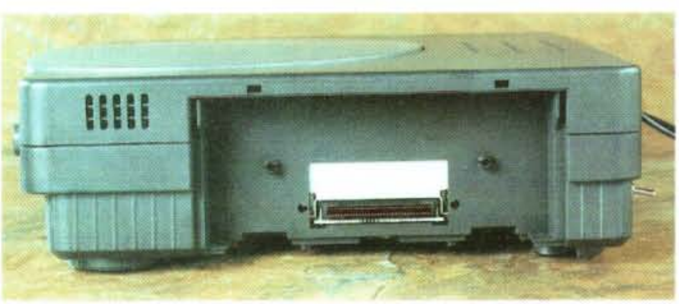
3DO: The story so far

The **GoldStar** 3DO



Manufacturer:	Goldstar
Price:	£400 (including pack-in game *FIFA Soccer*)
Release:	May (UK)

Korean electronics firm Goldstar launched its 3DO model in Japan in October last year and in the States in November – where it recently claimed it was outselling Panasonic's own machine. And it won't be long before another electronics giant feels the punch of Goldstar's marketing drive – it has licensed the CD-i technology from Philips and plans to have a compatible machine ready for launch later in the summer.



Goldstar's machine opens on the left side to reveal the AV expansion port nestling in a gaping aperture (above). 3DO will license future add-on technology to thirdparty manufacturers to ensure that each brand will have its own unique design and avoid potential incompatibilities. The unit (right) has an understated design compared to other 3DO systems





From the rear, it's clear that Goldstar has spent a significant amount of time in order to cover all options. From left to right: de-bugging/country code protection switch, expansion port, NTSC signal switch, RF port, S-VHS port, composite video port, audio (l and r) ports, power supply cable



3DO endured for the first few months after launch but accepts that it was the price 3DO had to pay for getting to the market first. 'Would it have been greater if we'd have waited until 1994 to launch and had really eye-poppingly great software that would totally blow away every person you'd ever met? Yeah.'

The lead that 3DO has built up over the PlayStation and the Saturn by being out there first will, he believes, ensure that it wins the 32bit battle. Historically, 'first-in equals first place' was certainly true for Sega, which beat Nintendo to the market in Europe and America with the Mega Drive, but not so for Atari, which lost out to Commodore's Amiga in the 16bit computer market.

Naturally, he prefers to look forward to a brighter future of original product. 'We tell developers now, if you're doing ports, kill them. We don't need them. There are hundreds of original titles in development.' However, Faber readily concedes that certain big-name titles such as *Myst* do 3DO no harm.

3DO can take heart from another old adage that says it takes a couple of years for the development community to really get to grips with a machine and start turning out great software (something PlayStation and Saturn owners may be facing up to as a steady stream of disappointing shovelware comes their way). There are currently 200 3DO titles in development worldwide and 75 titles planned for release in the UK this year alone.

That's a release schedule 3DO could have done with 18 months ago – especially as both Sony and Sega have a lot of titles in development – but it's proof that 3DO's much-maligned Market Development Fund – a $3 levy on every title sold to cover advertising, promotion and manufacturers' profits – hasn't deterred potential developers. 'The reaction was initially pretty negative,' accepts Faber. 'I think what a lot of them did was take their foot off the gas for 30 days in the fall but once it became clear that it was good for their business they said, "Now, I understand."' In light of Sony's recent announcement of a DM20 ($14.50) royalty on each European CD release, which looks set to cut margins and drive up software retail prices, MDF looks positively attractive.

A fresh crop of 3DO titles is renewing interest in the machine as the honeymoon period of the Saturn and PlayStation comes to a close. Both *Bladeforce* and *Killing Time* from Studio 3DO look outstanding, and thirdparty titles like *Po'ed* and *Slam 'n' Jam* are using the hardware well. 'This is the tip of the iceberg,' claims Faber, taking the chance to get in a sideswipe against the 3DO's rivals. And Faber is confident that 3DO's approach to educating developers is second to none. 'The systems put in place by 3DO were really good at getting developers up to speed,' he claims.





Studio 3DO titles ***Bladeforce*** (above) and ***Killing Time*** (left) are possibly the strongest examples yet seen of 3DO's performance

While some degree of mutual rubbishing is inevitable as the PlayStation, the Saturn and the 3DO gear up for battle on the shelves, it's true to say that 3DO has come in for more than its fair share of stick. Not that Faber is asking for sympathy; he accepts that it comes with the territory. 'One of the reasons why there are so many more negative comments made about 3DO, even among developers, is because they won't make negative comments about other platforms, as they will get hurt. Very often they'll be put into a disadvantaged position as a result.'

'The establishment of standards around the world moves in a glacial timeframe'

Bob Faber, managing director, 3DO Europe

Mud-slinging aside, Faber can't see 3DO losing out to Sony or Sega. 'They're going to come in, they're going to fight and we'll jockey for position and you know what's going to happen at the end of the day? All the competitors are going to be there.'

It's a typically open statement from a company that's genuinely trying to do things in a different way, a way that many in the videogames industry are still coming to terms with. 'What Sega and Nintendo have done has been, in the past, quite successful and it's an interesting model to look at,' says Bob Tate. 'From our point of view, to replicate that is not always the best thing, in that maybe in the future that isn't going to be the best way of approaching it. I think the market will decide which is the better in the long term.'

There it is again: 'longterm'. 3DO isn't going to go away – its major partners are all in it for the duration. Witness Matsushita's heavy backing of M2 and Goldstar's enthusiastic entry into the European market.

So, is 3DO destined to be the global standard for interactive entertainment? Bob Faber is realistic but optimistic. 'Now we're a lot smarter about the way people react to that statement. When you think about the establishment of standards around the world, that's something that moves in a glacial timeframe. It really takes a long time but we think doing many of the right things to make it happen. We're getting the right partners, we're developing the right skillsets, we're driving down the costs and we're increasing distribution.'

The vision is still there. All it needs is for the reality to catch up.



M2's astonishing 3D performance is illustrated by this realtime demo, the first of a set of engineering demonstrations produced to convince potential developers

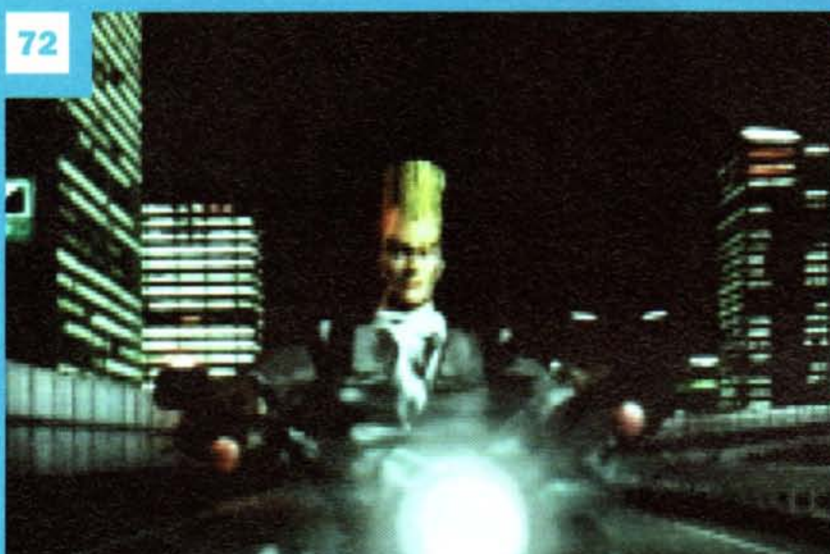
Testscreen

D*aytona USA*, the Saturn's answer to *Ridge Racer*, roars into the **Edge** office this month. Can it match the PlayStation's 3D abilities and deliver the definitive arcade driving experience in the home?

After a successful stint in the arcades, Namco's System 11-based *Tekken* is now available on the PlayStation. **Edge** finds out if it has the power to take on the current champions of the 3D beat 'em up, Saturn *Virtua Fighter* and PlayStation *Toh Shin Den*.

Also this issue: Origin unleashes a new biomechanical hero in its latest graphical adventure, *Bioforge*; and **Edge** playtests the first platform game to appear on the 3DO, *Gex*.

72



80



78



66



Tekken

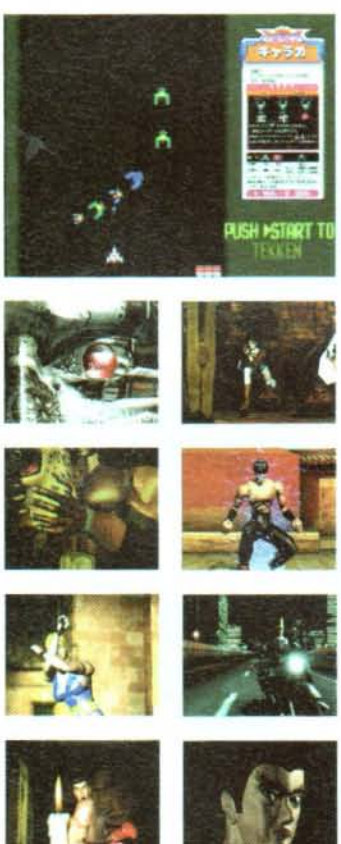
Format:	PlayStation
Publisher:	Namco
Developer:	In-house
Price:	¥5800 (£41)
Release:	Out now (Japan)



When a fighter successfully grabs an opponent, the camera repositions itself to cover the ensuing sequence from a clearer angle. Very impressive



As in *Killer Instinct*, characters can move a long way apart, forcing the game camera to zoom out dramatically. Note the lengthened shadows caused by the setting sun in this stage



After *Tekken*'s neat three-stage snatch of *Galaga* during loading, there's a wonderful pre-rendered intro (absent from the coin-op) featuring the eight main characters

Namco took a significant risk in basing its *Tekken* coin-op on raw PlayStation hardware, considering that it would be competing directly with Sega's Model 2-powered *Virtua Fighter 2*. But, as arcade gamers around the globe will testify, that decision was vindicated: although lacking the overall visual allure of *VF2*, *Tekken* not only matches (some would say surpasses) the style and quality of Sega's character animation, but it pushes its rival to the wire in playability terms, too.

And now, for once, a home system can boast an identical conversion of a cutting-edge coin-op – that overused phrase 'arcade perfect' actually does apply to PlayStation *Tekken*. Regardless of its merits as a conversion, though, the game welcomes scrutiny in its own right – it's fair to say that it jostles with *Ridge Racer* for consideration as the best PlayStation game yet.



Patently taking its inspiration from the *Virtua Fighter* series, *Tekken* presents a 3D polygon environment furnished with *Virtua Fighter*-style 2D gameplay. A selection of eight fighters present themselves at startup, each with his/her own range of special techniques, and the action takes place against a range of backdrops, varying in colour from the calm blue tones of Lake Windermere to the deep red hues of the superb Monument Valley stage, complete with slowly setting sun.

Rarely has the difference between static screenshots and the game itself been so pronounced as it is with *Tekken*. Stills may





Heihachi (left) is *Tekken*'s default end-of-game boss character. Polygon glitches occasionally appear, especially when both players select complex characters such as the ursine Kuma, one of the fighters who can't be accessed at the outset (above)





Kumimitsu, another character hidden initially, becomes available for use in twoplayer mode once the game is completed at 'Ultra Hard' setting. Player two's alter ego uses different weapons (above)

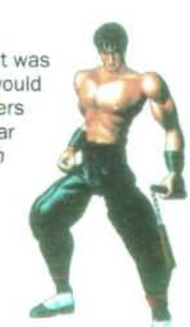


Wang (above) is *Tekken*'s most Orientally-inspired character. Each fighter has two sets of clothing – here, Heihachi's black outfit perfectly demonstrates *Tekken*'s texture mapping

look pretty but they fail to do the game justice: in action, *Tekken* is like no other title available on a home system. While *Virtua Fighter*'s motion-captured figures move with a breathtaking level of accuracy, they still fall way short of *Tekken*'s standards. Here, the characters bear phenomenal levels of shaded, texture-mapped detail and are remarkably fluid. The game runs at 60 fps throughout (the same speed as the *Virtua Fighter 2* coin-op), but it's only during the replay mode (which automatically kicks in at the end of each bout) that you're able to fully appreciate the grace of Namco's animation. This is best illustrated by grapples, throws and slams: as soon as one of these moves takes hold, the camera switches to the position that gives you the best vantage point, thus fully exploiting the potential of three dimensions.

With such attention devoted to the fighters' appearance and movements, it was perhaps inevitable that compromises would be necessary elsewhere. The game offers only flat parallax backdrops which fall far short of the benchmark set by *Toh Shin Den*, with its expansive, solid 3D features. However, the sheer speed and smoothness of *Tekken*'s zooming landscapes more than compensate.

Beneath *Tekken*'s head-turning graphical flair lies a beat 'em up of





***Tekken* offers four viewpoints, accessed at the beginning of each bout. The default setting (top left) precedes (clockwise) two more aerial views and a ground level, side-on affair**



unmatched sophistication. Although it essentially plays very similarly to *Virtua Fighter*, *Tekken* differs in that each of the PlayStation pad's four main buttons controls a fighter's limb, each of which in turn has its own characteristics. Certain characters can manage only a jab with their left arm, for example, while their right arm is able to deliver a meatier, more substantial blow. The game arguably has as many possible moves as *Virtua Fighter*, plus many other cunning tactics to enhance the gameplay. When floored by an opponent, for instance, it's possible to either get straight to your feet, roll towards or away from danger, or even flip directly back into the fray with an attack – a hugely satisfying gameplay twist.

Beat 'em ups are respected for their ability to supply twoplayer enjoyment but are often accused of limited oneplayer longevity. *Tekken* is really no exception – with continues, you should be able to master all five of its difficulty settings in the first day's play. But there are also nine extra boss characters to control and hidden extras which allow you to fiddle around with additional playing modes.

Tekken's sound is just as well-realised as its visuals. The selection of powerful tunes which play from CD have been 'arranged' to sound even better than the chip-generated coin-op music (although you can still select the originals in the options mode), and the samples and effects burst forth just as effectively, courtesy of the PlayStation's SPU.

The painfully long loading times of CD-based systems is, of course, a familiar complaint, but it's in this area that *Tekken* finally overpowers its competitors – the initial boot-up (during the splendid, arcade-perfect *Galaga* game) lasts just eight seconds, and between-bout delays are non-existent.

Tekken rips up the rule book and delivers an experience that even its £2000 coin-op namesake can't match. Expect to see it alongside *Ridge Racer* on the shelf marked 'Absolute Essentials'.

Edge rating: **Nine** out of **ten**

System 11: Namco's PlayStation coin-op



The *Tekken* coin-op uses Namco's System 11 chipset developed at its arcade R&D HQ in Tokyo (right)

The Namco System 11 board on which the *Tekken* coin-op is based was conceived two years ago. Namco and Sony already enjoyed a close relationship at the time, which was further cemented when Namco's research section managing director, **Shegeichi Nakamura**, met Sony Computer Entertainment's R&D supremo, Ken Kutaragi, to discuss preliminary PS-X specs.

Tekken was already on the drawing board when the Sony/Namco venture was finalised, and Namco engineers initially designed the game for the System 22 board used in *Ridge Racer*. 'We saw that Sega would use its Model 2 board for *Virtua Fighter 2*, so we were going to use System 22 against them,' explains Nakamura. 'If we had done that, the machine's price would have been expensive. But when Sony came along we decided to go for a low-cost system – in short, we've left the big arcade stores to Sega and *VF2* and *Tekken* has been sold to smaller arcade centres.'



The System 11 hardware consists of two boards, one housing the PlayStation's GPU and CPU and a second including Namco's own sound chips. Other changes include the addition of extra VRAM and dedicated CPU RAM. Namco's research section chief, **Toru Ogawa**, is particularly pleased with the coin-op's use of flash memory: 'Speaking in the extreme, we can change the data one hour before a game's release,' he boasts.

As well as conversions of existing coin-ops (including *Ace Combat*, *Ace Driver*, and *Ridge Racer 2*), Namco has a further four titles planned for System 11, all of which are likely to make the journey to the PlayStation.



Kazuya











Kazuya is *Tekken*'s lead character and as such has a comprehensive selection of moves at his disposal. While perhaps not as eyecatching in action as some of the more flamboyant fighters, he's the one those starting out will opt for. His attacks include a skull-shaking headbutt (top right) and an axe kick (right middle)

King











Although apparently beast-like, King is in fact a human fighter who merely dons an intricate face mask for battle. His strengths lie with his holds and throws, including this headlock (top left), achieved by flipping onto his hands, locking with his legs and finally flipping back to stove his opponent's head into the floor. Nasty

Law











Law is a Bruce Lee type with ultra-fast punching and kicking, a range of visually spectacular grapples and even a backflip kick. His most impressive attack, however, sees him actually using his opponent as a stepladder; he then somersaults into the air, returning to solid ground to flatten his victim, who collapses in a crumpled heap on the ground (top right)

Michelle











The first of two female characters, Michelle is a beautifully realised fighter with fast-moving hands and a penchant for intricate but solid slams and throws. During a bout she's able to slip around her opponent and grapple from behind to deliver a vertebrae-compressing press (top left) Her two-handed stun punch (above left) is an effective, if visually plain, attack

Jack







Jack is a cybernetic organism whose outsized arms move to the accompaniment of suitably mechanical-sounding grinding and grating. His huge bulk lends itself to a range of fairly primitive movements, including a body splash, a ferocious lift and slam (top right) and a distinctly weird sitting shuffle attack (above)

Nina







Nina is *Tekken*'s only British-bred fighter, and in combat uses what appears to be a variant of judo – possibly aikido. Her style centres on throwing, including this one-armed example (bottom left and above). Various characters can manage an overhead scissors-style kick, but few pull it off with such grace and flair (top left)

Paul







The American member of the troupe, Paul, is – like Kazuya – a fairly well-rounded character. His two-legged throw, whereby he plants both feet on his opponent's chest, grabs an arm and proceeds to flip them over his head to the accompaniment of a stomach-churning vertebrae crunch (bottom right), is one of the most complex throws in the game, and hugely entertaining

Yoshimitsu

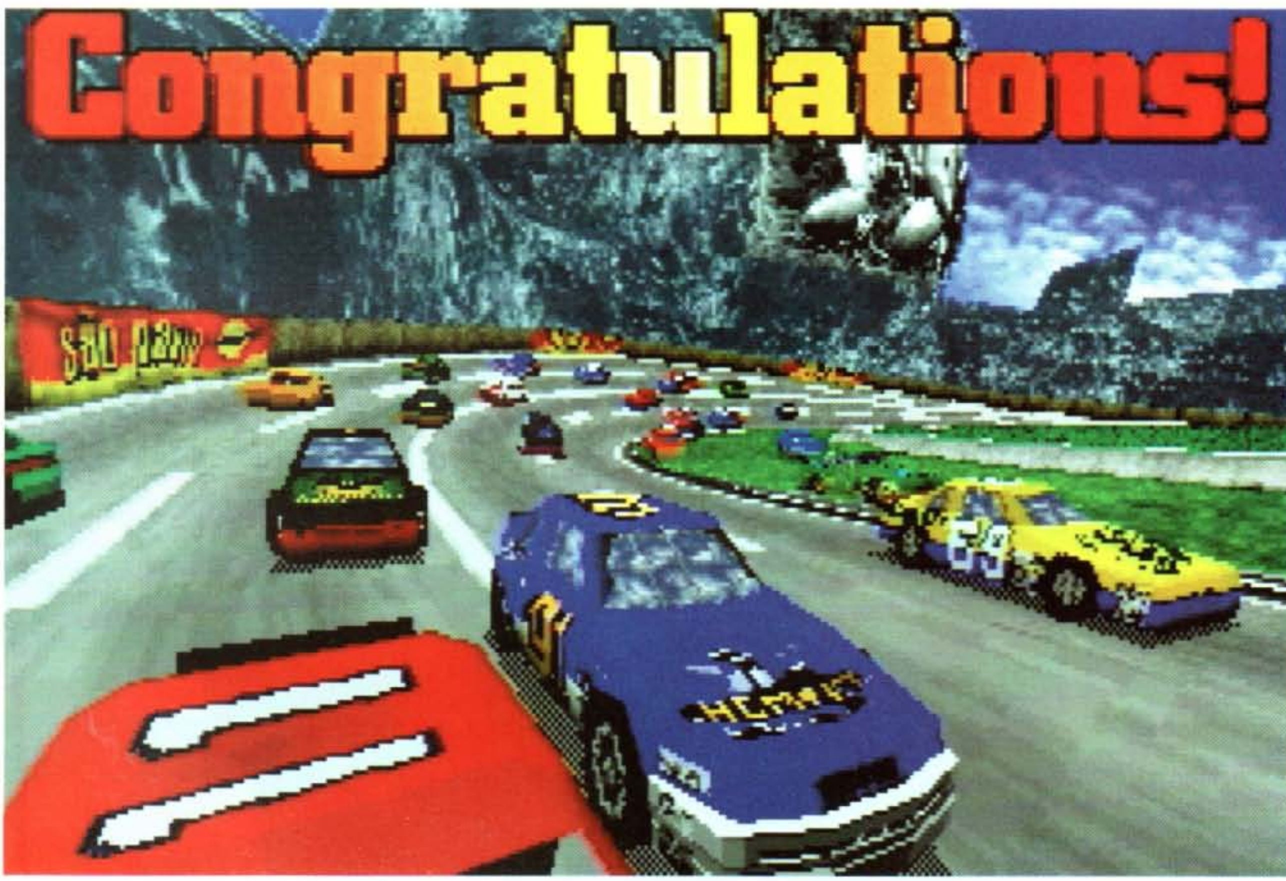






The most unusual character of the default bunch is Yoshimitsu, a metal-clad warrior with sharp blades at each arm. He's also one of the fastest fighters to use: the speed of his spinning attacks are not only dazzling to the eye, but leave him so dizzy that he's prone to collapse after intensive rotation. You'll wince every time he connects with his holding face smash (top left)

Daytona USA



Daytona USA is not a killer app for the Saturn in the same way as *Ridge Racer* was for the PlayStation. Although congratulations are in order to Sega for retaining the essential gameplay, the lack of graphical finesse and dreadful music ensure that this will be a favourite rather than an all-time classic

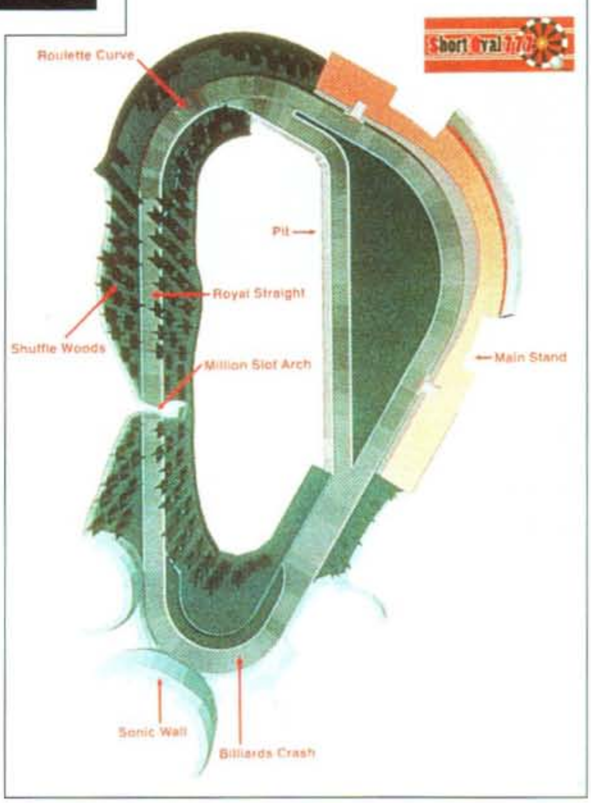
Format:	Sega Saturn
Publisher:	Sega
Developer:	AM2
Price:	¥6800 (£48)
Release:	Out now (Japan)

If it weren't for *Ridge Racer*, there's little doubt that *Daytona USA* would have been regarded as the ultimate next-generation videogame. Five months ago, its strong Japanese design, fast-paced action and cult arcade status would have clinched it for the Saturn. But unfortunately for Sega, Namco pipped it to the post, and *Daytona* now has a formidable adversary to contend with. Just as the *Ridge Racer* and *Daytona* coin-ops went head to head, so their respective home versions will inevitably be compared to each other. And it looks as if Sega could find itself forced into second place.

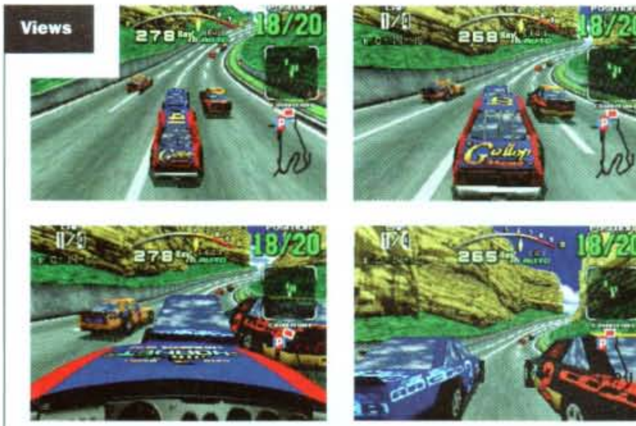
In an effort to keep up with its arch-rival, Sega has rightly concentrated on maintaining a high level of graphical detail. But *Daytona*'s visuals fall well short of *Ridge Racer*'s. By any other standards, they're exemplary, but the low resolution, relative lack of colours and less-than-silky update ruins any chance of an overwhelming first impression.

The game's rough-and-ready looks (the classic symptoms of a rush job rather than evidence of the Saturn's innate technical inferiority) would be acceptable if the track and scenery were drawn to the horizon, but the crucial graphical weakness of AM2's conversion is that it blocks in huge chunks of scenery disturbingly late. Although the vastly more powerful arcade machine suffers from the same drawback to a certain extent (due to

Track one



Views



Daytona's four views (clockwise from top left): high above for tactics; low above for balance; bonnet for damage control; bumper for speed











Track one is the most basic – the Billiards Crash corner is an ideal spot for learning to powerslide. A rolling start prevents wheelspin (left). 40 cars on a track means the racing gets pretty close at times (middle left). The pink car (above) is a reward for winning. Sonic Wall (right) is a tricky bend

lack of video memory in the first version of the Model 2 board), it happens much further into the distance, so the negative effect is kept to a minimum. Even though the home version runs in a 10%-reduced letterbox format, when you approach a corner you usually find that parts of the scenery are missing until the very last second, which makes it extremely difficult to think ahead.

Most people would agree that a thumping soundtrack and dramatic effects are essential components of a tense and realistic racing game. Although Saturn *Daytona*'s sound is identical to the coin-op's, the karaoke-style wailing, repetitive samples and weedy collision effects become much more obtrusive and irritating outside the cacophonous atmosphere of an arcade. Considering that the Saturn theoretically has the finest sound chipset of any console, this is a major disappointment.

So far, then, it looks as if *Ridge Racer* has established an unassailable lead over *Daytona*. But that's without taking into account the most important criterion of all: gameplay. Devotees of the coin-op will be reassured to learn that the home version of *Daytona* has retained almost all of the features that made the original an arguably more substantial experience than *Ridge Racer*. Powerslides, collisions, manically swerving competitors and sophisticated artificial intelligence all help to compensate for any initial disappointment at the graphics.

Powerslides play an especially important role in adding a unique dimension to *Daytona*'s gameplay. Initially, they seem uncontrollable, but with practice the correct braking/acceleration combinations prove rewarding (while still falling a little short of the coin-op's elusive handling characteristics).





In endurance racing, the timing of pit stops is crucial. Expect to lose around 20 seconds by the time your animated mechanics have finished work and you're up to speed again



Entering Tyranno Tunnel flat out with a fort-like wall on one side and a vicious entrance on the other is an adrenaline-pumping experience. The tunnel itself is a slight disappointment



The scenery blocks in very late in places. This corner still doesn't exist onscreen even as you approach it

Continued

The artificial intelligence of *Daytona*'s cars is greatly superior to *Ridge Racer*'s. Instead of getting in your way by accident rather than design, rival cars intelligently block your path with violent swerving manoeuvres. This gives the game added depth, especially as the cars also jostle for position among themselves – the spectacular crashes which often result are among the high points of the game. The excitement is enhanced by the fact that there are up to 40 cars on the track at once.

Surprisingly, despite the high number of vehicles there's little slowdown – the only occasions when performance takes a noticeable downturn are when there are complex corners to be drawn. Granted, the cars are smaller and less smoothly shaded than *Ridge Racer*'s, but given the sheer number of them onscreen at any one time it's an impressive endorsement of the machine that the action maintains a decent pace. The update could be smoother, but the game still manages to create an effective sensation of speed.

The arcade's four views have been retained, allowing you to adapt the game to your own racing style. Each has specific advantages and disadvantages, depending on whether you're more concerned with thrills or tactical control: the high and behind-the-car perspectives are best for an overview of the scene and allow you to dispense with the proximity radar, while the in-car camera speeds up the frame rate noticeably

The game comes equipped with a number of driving options which allow you to eek out every last moment of pleasure from the title. A 'Saturn' mode offers a range of new cars, while the 'Endurance' and 'Grand Prix' options provide a more realistic racing environment – pit stops now have to be included in your tactics. This aspect of the game goes hand in hand with another aid to realism: when your

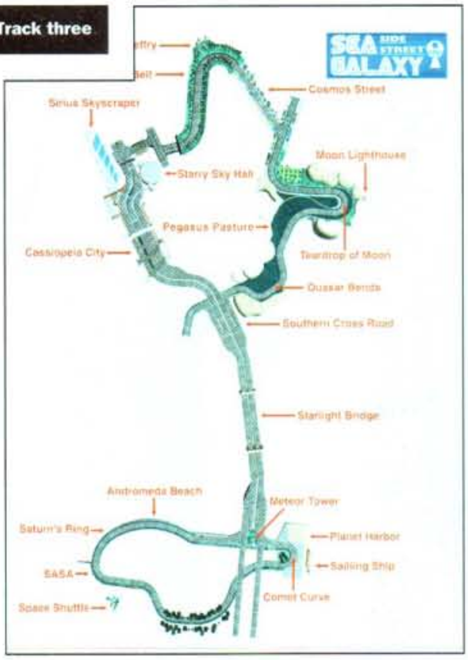
Track two





Probably the most impressive looking of all three tracks, Dinosaur Canyon features fortified buildings, hairpin bends and fossil cliffs. This tunnel (right) shows how the Saturn game compromises on detail – unlike in the coin-op, your car remains in shadow even when it passes the windows

Track three



The Advanced course is aptly named. The length and scattered hazards make it by far the hardest to win at

car smashes into walls, melts rubber and drives on grass, it suffers a degradation in performance as well as superficial damage. Pit stops allow this damage to be repaired – a crucial factor in the endurance races.

As in the arcade, there are three different courses, each of which offers its own challenge – to stand any chance of making progress, you have to familiarise yourself thoroughly with each one. This gives *Daytona* a significant longevity advantage over *Ridge Racer*, which, despite its plethora of track options, essentially has only one course.

As well as the three tracks, *Daytona* contains plenty of secrets to keep you playing. Doled out both with key-press combinations and as rewards for coming first, they include mirror tracks and extra cars. And, while the standard end sequence can be accessed by finishing in the top three on any race, there's also an unusual bonus mode when you've completed all three courses...

Although AM2 has managed to replicate the coin-op tolerably well, Saturn *Daytona* fails to capture the arcade experience that PlayStation *Ridge Racer* so convincingly delivers. Although there's no single factor that cripples it, the game suffers from an accumulation of niggles which ensures that it never quite manages to fulfil its enormous potential. If you're expecting an arcade-perfect conversion, you'll be slightly disappointed, but if it's a fast, thrilling racing game you're after, *Daytona USA* has a great deal to recommend it.

Edge rating: **Eight** out of **ten**











This bridge is an impressive starting point (top left). These pillars are just waiting to be hit (top right). Another wheelspin (middle right). Careering through Cassiopeia City (main)



Slowcoaches can expect some serious mayhem to ensue when the rest of the cars catch up





The mirrored sweep on track two (top) – racing like this is surprisingly easy. The extra cars above) offer little extra performance but the special winning mode makes it worth it

Bioforge

Format:	PC CD-ROM
Publisher:	EA
Developer:	Origin
Price:	£50
Release:	Out now



Wide-angle viewpoints allow you to view the overall scene but make it difficult to pick out your character



The vast number of backgrounds in *Bioforge* provides plenty of visual stimulation during play



The overfamiliar glossy veneer of *3D Studio* is much in evidence throughout *Bioforge*

B*ioforge* is a game of paradoxes. One moment it grips you, leading you effortlessly through its intricate and involving plot, while the next your blood pressure soars as the fiddliness of the gameplay (a hallmark of the graphical adventure) becomes overwhelming. From the moment you start playing, it's obvious that the game has huge potential, but missed opportunities constantly threaten to sully an otherwise rewarding experience.

Origin's skill at crafting a storyline is not in doubt. The *Ultima* and *Wing Commander* games have been successful largely because of their rich background detail, and this is also *Bioforge*'s forte. The abundance of information lurking in every computer terminal, personal data log and cut-scene provides a coherent, credible world for you to investigate.

The game's protagonist is a genetic abomination who is attempting to escape from his evil captors and wreak his revenge in the process. The action is set against backdrops complete with a variety of camera angles, a là *Alone In The Dark*, but, regrettably, they've all been rendered as low-res *3D Studio* images, resulting in a fuzzy, shiny appearance which compromises realism. As the game requires 8Mb to run and is released on CD, Origin's decision not to render all the scenery in high resolution (or at least provide a SVGA option for owners of high-end PCs) is questionable.

Similarly, the hero and all the other characters suffer from an unusual affliction in videogames: they pixellate as they get further from the camera (as opposed to blocking up when close. This means that the inventive biomechanical design of the main character is wasted, since he spends most of the game as an amorphous collection of grey blobs in the distance. With all the backgrounds pre-loaded and no continuous game logic calculations to deal with, you'd think that a hefty PC would be able to display a single polygon-generated character in realtime with ease.

Bioforge's challenge is set at roughly the right level, with only a few scenes causing serious teeth gnashing. As with all games of this genre, there are ludicrously obscure

Fighting





Don't turn your back on this armless individual (above) – he comes out fighting (above right)

sections, but they're not widespread. The playing time is lengthy enough to keep die-hard adventurers satisfied, and Origin applies various tactics to maintain the tension. Some sections are excellent – especially the subterranean mazes which you have to navigate using the security camera system, and some of the shooting scenes – but there is a fair amount of corridor wandering to contend with.

One of the biggest disappointments is the combat system. Despite the adjustable difficulty level, fighting is ridiculously easy. Although there are 18 well-animated moves for you to experiment with, the enemies never display sufficient intelligence to block them or back off, which means that when you've aligned your character correctly and found an effective move (usually a low kick), its all too easy just to pummel the button until your opponent croaks. At that point you're generally treated to a bout of Origin's now legendary square-jawed jingoism (ie the goodies preach in American accents and the baddies cackle in Russian ones).



It's easy to become a bloody mess when the setting is on 'hard' (above). Sadly, *Bioforge*'s potentially excellent combat system is ruined by poor AI – only a few moves are ever used

Bioforge could accurately be described as a space-based *Alone In The Dark*, but it lacks the style and charm of the French classic. The explore/collect/fight principle which was so effectively employed in that game has been greatly enhanced here, but *Bioforge*'s camera angles are functional rather than dramatic and none of the characters has the personality and humanity which made Carnby such a well-rounded hero. The result is that *Bioforge* is an enjoyable but ultimately uninvolving experience.





Stylish camera angles (top) are a rarity in *Bioforge*. Most of the shots offer a purely functional view of the action (bottom)

Edge rating: **Seven** out of **ten**

Gex

Format:	3DO
Publisher:	BMG
Developer:	Crystal Dynamics
Price:	£45
Release:	Out now





The size of the main sprite often leaves little room for exciting manoeuvres. Gex's tail is his most useful attribute, but power-ups are also available



The second level is one of the most colourful (top). Gex spends much of his time suckered to vertical surfaces (above)

Although the platformer and the beat 'em up are the two most popular game genres, until recently the 3DO didn't have a head-turning title competing in either of these crucial sales areas. In the month before Christmas 1994, however, this situation started to change. The arrival of *Street Fighter II X* and *Samurai Shodown* proved beyond doubt that the 3DO could come up with the goods in the fighting arena. Now the 3DO has its first entrant in the platformer contest, namely *Gex*.

Crystal Dynamics was determined to get this one right. *Gex*, starring a gymnastic green lizard, was originally due for release in November last year but, due to an extensive programme of refinements, has only now scuttled onto the shelves. Unfortunately, as has been proved by many other games, protracted development periods don't necessarily result in outstanding software.







Visit 'The Dome' (above) to access the individual worlds (above right). *Gex*'s structure is excellent, with an equitable difficulty setting and fair reset points

Gex is a typical Crystal Dynamics product – stylish, polished and visually opulent – but it suffers from a lack of originality and an emphasis on looks over gameplay. And even the visuals – which Crystal has spent considerable time perfecting – are hardly revolutionary: due to the 3DO's weak scrolling abilities they fail to match up to the standard set by titles on the SNES and Mega Drive.

Gex sits awkwardly between *Sonic* and *Mario* in the pantheon of platform game design. The lightning reflexes necessary in *Sonic* and the pixel-perfect accuracy required in *Mario* are both in evidence, but the overall feel of the gameplay falls well short of either of those classic platformers. *Gex* has neither *Sonic*'s speedy acrobatics nor the wealth of control mechanics characteristic of *Mario*. The result is a stop-start game that never really flows and fails to satisfy tactically.

The design of the Gex character himself owes more to American sensibilities than Japanese ones. Like Earthworm Jim, he lacks the cuteness and personality which made his predecessors such immediately recognisable cultural icons. There are hundreds of frames of lovely animation, but Crystal Dynamics' desire to show these off results in one of *Gex*'s greatest failings: the main sprite is much too large. When vertical, Gex occupies a good 30% of the screen height; this doesn't really affect your ability to avoid collisions but it does seriously hamper attempts to play quickly.

This problem is compounded by the scrolling. Instead of keeping Gex in the dead centre of the screen all the time, the game gives him licence to perambulate around until a scrolling point is reached, whereupon he's

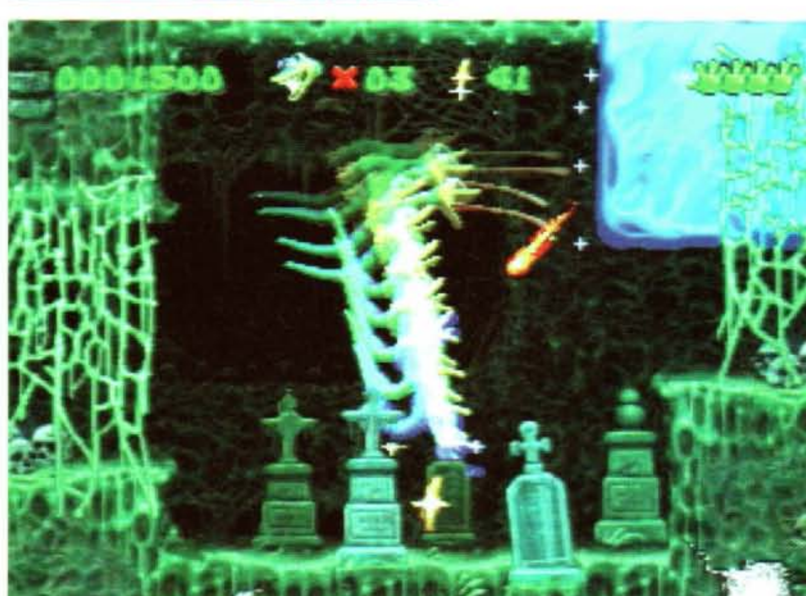
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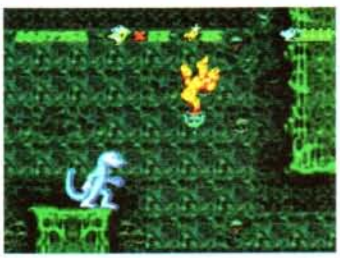


Icy globules of Gex's spit envelop enemies (top). Finish them off with a well-placed tail flick before they can recover (top right). *Gex* is colourful throughout – explosions like this (above) are common. The speed power-up (right) is excellent, but due to the stop-start nature of the game you rarely get the chance to use it effectively



testscreen





***Gex*'s scrolling method means the player often has to 'back up' to reset the screen. It is possible to stand at the edge of the screen without forcing an update (above)**

shifted back to the middle. Most of the time this isn't a problem but it does occasionally become annoying – particularly when you're retreating from an unseen enemy.

However, Gex's redeeming feature is that he controls reasonably well (and, thankfully, Crystal Dynamics has allowed the player to redefine the buttons). He's not easy to master but after a certain amount of practice it becomes rewarding to pull off runs and jumps. On the other hand, as there's no time limit and therefore no sense of tension (there are hundreds of places where you could sit forever without penalty), your satisfaction is limited to sporadic bursts of self-congratulation rather than the 30-second spells of running and jumping and fighting for your life followed by brief respites of incredulous relief that characterised *Mario*.

Platform games live or die by their structure, and Crystal Dynamics has done well to stagger the accessibility of *Gex's* levels. There are five worlds to work through (each of which is intended to represent some kitsch TV nightmare), subdivided into five levels and a boss section. In each level there's a remote-control unit which you have to collect and take to the exit, at which point you can proceed to the next level. Well-placed return points ensure that you don't have to trudge through whole levels over and over again.

The level design itself is also impressive, with a mixture of straightforward left-to-right progress and more labyrinthine sections. The main problem, again, is one of size. Because the Gex sprite is so large, the platforms have to be correspondingly mammoth, which limits the area that can be seen at one time. This affects the gameplay considerably, as there's frequently only one platform onscreen that can be seen or reached. An overall reduction in scale would have benefited the game greatly, even if it meant sacrificing some of the sumptuous graphical detail.

Gex's difficulty is set at about the correct level. It's easier than, say, *Earthworm Jim*, because the levels are essentially straightforward, but there's a gratifying range of enemies and it possesses the inherent strength (some would say weakness) of all platformers, in that you have to know what to do at any given time (do you sit on the rocket or cling beneath it?), which leads to a satisfying accumulation of knowledge.

Ultimately, though, *Gex* falls prey to what it's ostensibly lampooning – America's superficial, meretricious TV culture. It's seductive on the surface but far too insubstantial and forgettable to provide anything to really get your teeth into.

Whether it's down to a misplaced faith in the 3DO's 2D abilities or simply a lack of ambition to produce anything genuinely original, Crystal Dynamics has produced a derivative, sugary platformer that fails to make effective, innovative use of the hardware it's running on. There's nothing intrinsically wrong with *Gex*, but 3DO owners will expect a whole lot more.

Edge rating: **Six** out of **ten**









These cameras (top) are scattered through the levels. Tail flick them to activate the reset points. After completing each level on a world you get to fight a boss (above, left). Each is in keeping with the world's tone

Gunsmoke was one of those classic coin-ops that people wasted the best years of their lives trying to master. **Edge** pumps in just a few more coins...

Gunsmoke









While *Gunsmoke*'s ten-year-old visuals border on the repetitive, they still have a certain charm. Joe Keep was the game's bounty-hunting hero (top)

***Gunsmoke*'s ten uncompromising end-of-level bosses provided a tough challenge: Master Winchester was the first (top). Level two featured a steam train and dynamite-lobbing Indians (right)**

Format:	Arcade
Manufacturer:	Capcom
Players:	1
PCB price:	£20-30
Released:	1985





Level three (top) was where it started getting hectic. Reaching the later levels (above) required the full complement of power-ups

Although it was a follow-up to the successful vertical scroller, *Commando*, Capcom's six-gun-toting Wild West shoot 'em up failed to make it into the coin-op mainstream. Instead, it was relegated to the darker corners of the nation's arcades, where it attracted a cult following.

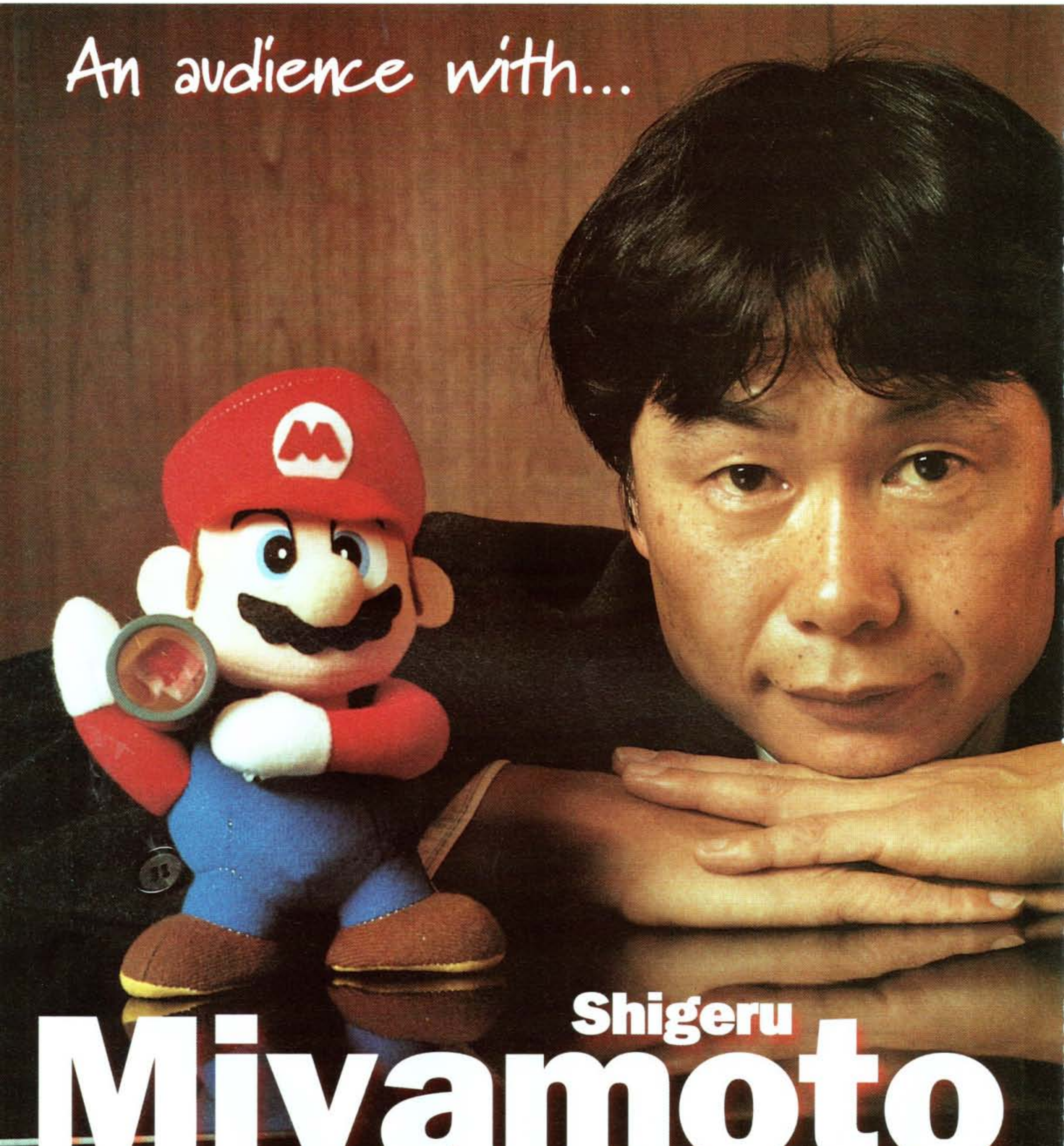
Unlike its predecessor, *Gunsmoke* employed a three-button firing system which averted the problem of constantly having to wrench the joystick in the direction of fire (thereby inducing severe wrist-ache) and allowed the player to shoot at enemies in three directions while concentrating on dodging salvos of bullets (although enemies which manoeuvred themselves behind the player presented a new set of difficulties).

But as with other early Capcom games, *Gunsmoke*'s gameplay was pure and devilishly challenging, with the kind of fast, rewarding action typical of well-honed shoot 'em ups. Only the most skilful pros could make it past the first few levels and, as always, the secret to getting a significant distance into the game lay in securing a healthy stash of power-ups. These subtle enhancements, hidden in barrels, included the ability to extend the reach and the speed of bullets, and occasionally even offered a mode of transport – a plump pony which gave an all-round performance boost once the player was astride it.

Playing *Gunsmoke* a decade after its release offers a nostalgic trip back to the golden age of Japanese coin-op design. This was an era when success wasn't apportioned according to the amount of extra coins you deposited; you had to learn a game's frailties to stand a chance of beating it. And few managed to defeat *Gunsmoke*.

An audience with...

Shigeru Miyamoto







The creator of Mario gives **Edge** the benefit of his two decades' experience in the art of game design

He is arguably the best known and most admired games designer in the world. It has been said that he 'has the same talent for videogames as the Beatles had for popular music'. Of his own success he says, simply, 'I think it is nothing more than destiny.' He is Shigeru Miyamoto, the man without whom Nintendo may have remained the moderately successful videogame manufacturer it was when he joined it.

Born in 1953, Miyamoto demonstrated an appetite for creativity from an early age. During his formative years, his passion lay with puppet making, leisurely sketching of his surroundings, and cartoons – both Disney features and his own efforts, created with flip books.

Continued next page

interview

While still believing deep down that a career as a performer or artist beckoned, he began a degree in industrial design, taking five years to pass the course – he spent much of his time playing guitar or pursuing art interests rather than engaging in coursework. Certain that he could not bear the strict regimen of a typical Japanese firm, he joined the relatively unconventional Nintendo in 1977 as its first staff artist, even though the company had no need for one – such was president Hiroshi Yamauchi's belief in the young Miyamoto's potential.

18 years (and around 70 million cartridge sales) later, the father of Mario is heading Nintendo's push into the next generation via Ultra 64 software project management. It is widely felt that if anyone can rebuild Nintendo's success in the face of intense competition from 3DO, Sega and Sony, it's this man. **Edge** joined him at Nintendo's Kyoto headquarters to discuss 3D games, Kansai humour and French serenades...







Edge The original design of the Mario character was partly the result of hardware limitations. So what can we expect him to look like on the Ultra 64?

Shigeru Miyamoto I can't really say too much about it... Mario is very easy to draw using dots. Now, with polygons, it will be possible to draw his image with more precision. Mario will certainly have a more complex design – his moustache, hat and nose will be drawn more clearly.

Edge What do you think of the current vogue for 3D games?

SM When *Space Invaders* was written, nobody at that time was able to imagine what the actual technology was capable of, or where it would go – they would have been very surprised. Games became more and more complex, and the consequence was that lots of games appeared that were very different. And 3D gives games even more complexity, so essentially it's just about making games wider in scope. From a 2D game as a basis it's possible to make a 3D game by adding some new points made possible by 3D. Personally, I'm very interested in making some new 3D titles based on old 2D ones. The additional complexity offered by 3D gives more possibilities to creators and that in turn is good for players.

Edge When you design a game, what aspect do you work on first?

SM The game system. More precisely, I'm thinking about what a player would like to play. I try to make a game for the players' point of view and imagine what kind of character they would like to be. Then I move onto building up the game, adding a scenario, deciding on a setting, the characters and the events that will take place. So, I try to meet the customer's wishes first. I haven't had much experience in developing RPGs but it is very important for that type of game in particular.

Edge Do you prefer working on your own, creating original games from scratch, or are you happier adding the final touches to semi-completed projects, as you did with *Starwing* and *Donkey Kong Country*?

SM If you ask me which is easier, I should answer semi-completed projects, as I can just add whatever new, exciting aspect I can think of without experiencing a birth pang. It's always fun to improve a game by supplementing other people's skills on half-completed projects (providing that the project is a good one). Making wonderful interactive entertainment from scratch always requires hardship, time, energy and a lot of other resources. However, you'll never improve your skills without feeling that birth pang.

Edge What's the secret of a good game?

SM Well, to make a game you must put in a lot of effort [laughs]. I'll put my neck out and say that PlayStation games sound good, but when you watch them in action they're not finished at all in my opinion. A game is finished when a creator decides it is. There are lots of games developed for Nintendo that have to be refused release because they are not finished. When you are making a game the creator must not allow it to be released because he is satisfied – he must always think about the player's feelings and wishes. Self-satisfaction is not conducive to creativity. I think that European painters – like the impressionist Cezanne, for example – were always thinking about how to surprise the customer – to impress them in a gallery. It is very important.

Edge Most of your games have a unique 'feel' – do you think this is your own personality stamp or simply a Japanese style of game design?
SM I believe that we are not making Japanese games, but Kyoto games, if you follow me. The sensibilities of a Kyoto game are different from those of a Tokyo game, although both are obviously Japanese cities. We Kyotoites hate to follow fashion but rather love to set the fashion. The thing we always keep in our mind is that we should always make better games than ever so that gamesplayers all over the world will praise us.








Edge Nintendo games often have an element of humour. Do you regard humour as an important component of your games?
SM I don't know if our games are humorous. If you think so, it's probably because of the nature of us Kansaiites. Kansai is the region covering Osaka, Kyoto and several other cities. The Kansaiites make much of wit and explicit jokes, and are proud of making people laugh. Kansaiites feel like cracking a joke or two even during very serious conversation.
Edge What is your favourite kind of game?
SM I don't actually *play* many games. I like to play around with them, but I don't really spend much time doing it. If you want to play role-playing games you have to play for at least five hours to enjoy them and I don't go for that kind of obligation. I like things like Tetris, for example, which are enjoyable in a shorter period of time. Outside of my own productions, my favourite videogame is maybe *Pac-Man*.
Edge How did your career at Nintendo develop – how did you get to the position you're in now?



SM When I joined the company I was working in product planning. We had to choose new ideas to put into production and just about anything was under consideration: toys, new types of motors… It was then that I discovered videogames, and I realised that was the kind of product I wanted to make. So I didn't join Nintendo with the intention of making videogames – I discovered that later on.
Edge What do you think about Sonic, Sega's reply to Mario?
SM I've never really played *Sonic* games much.



The character itself is nice and I think Sega succeeded in making a good, strong character. There are lots of games that try to imitate Mario but Sega did especially well with Sonic. Despite his resemblance to Mario, there are some special points that make him different: the energy, for example. Among Mario's imitations, Sonic is a good one.
Edge What about Earthworm Jim, Shiny Entertainment's popular new character?
SM Unfortunately, I have not had the chance to play it much. But I liked his expression when he fired the gun. That kind of expression is one I was thinking about incorporating in my own game. It conveys the idea of shooting without actually showing the flying bullets, and could be exhilarating for the player.
Edge What common mistakes do you think are made by your competitors when they imitate your work?



SM Unfortunately, our competitors seem to simply try to imitate the surface and just end up making very badly balanced games. They never understand why and how we have done what we have done to achieve each game's content.
Edge Do Nintendo and Sega have the same approach to games?
SM I think Sega is trying to imitate Nintendo's way of business, but it makes some modifications. Perhaps Sega's particular strengths are its arcade business and its capacity to produce new hardware. Nintendo's strategy is different from Sega's – Nintendo gets involved in research and development and markets the results of its research. Sega proceeds in another way – it imitates Nintendo and tries to produce research and development on products that Nintendo is going to sell. It researches only the products that it knows it wants to sell. The results are the same for both



Shigeru Miyamoto is based at Nintendo's world headquarters in Kyoto, Japan. At the moment, however, he's spending most of his time in the United States working on Ultra 64 software

Continued next page

interview

companies but Sega is always thinking in terms of the market.

Edge You're now working in America. What specifically are you doing there?

SM Right now I'm working with Paradigm Simulations. There are lots of companies involved in 3D and of course Nintendo wants to use the new techniques being made available. My overseas job is linked specifically to product quality. As you know, the quality of products is very important to Nintendo, so I evaluate products to decide whether they're suitable for us. I'm always thinking in terms of the Nintendo brand, and ultimately I decide if the product is fit for production.



Edge How easy are you finding dealing with teams based overseas?

SM Communication with foreign teams is not always easy – our way of thinking is often different – but I have to decide whether each product is suitable for Nintendo. There are some enjoyable times but there are also some difficult ones. I think that I shouldn't force myself too much upon outside teams as it would be harmful to the products they're working on. So instead I play, and we discuss ideas together. I think a producer has to be removed enough so as not to influence the team too much – the less the producer gets involved, the better the product is. If I get involved too much, we start having trouble… [Laughs.]

Edge Did you take your NCL team with you to the US?

SM I'm working with NOA staff right now, as I went to the States on my own. This month things will change and I'll be in charge of a team of young NCL designers.

Edge Do Japanese and American production styles differ? And how do they compare with European developers?

SM I like the English way of working very much. I've worked a few times with English developers and everything was perfect. I'm a little worried about the American way of working, because in America I worked from more of a business position, whereas in England I worked with development teams. I say that I like the English approach because they work the same way as me, I don't know exactly about America…

But like Japanese, American producers – movie producers, for example – need to be involved very deeply in their work; they put in a lot of effort and sometimes there's nothing left for a private life. I'm sure that Americans work very efficiently, but sometimes when I work with them they are careless. I prefer working with English because their way is more Japanese.

Edge And the French?

SM Oh, I don't really know at all… I can imagine the French on a veranda listening to a serenade, but for games… [Laughs.] Seriously, they are doing some very good games. Infogrames' *Alone In The Dark* is the sort of game I would like to make.

Edge What is your actual role in the Ultra 64 project?

SM I'm responsible for the software. There are certain companies based outside Japan who have been working with Nintendo for a long time, and I'm in charge of the quality of their games, and I also provide ideas.

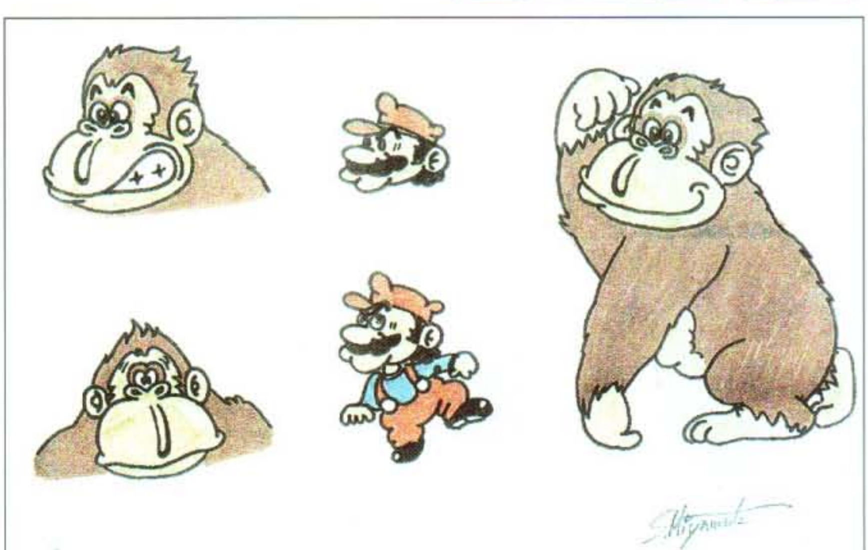
Edge Are you working on the sequel to *Pilotwings* with Paradigm?

SM I can't really talk about it. Generally speaking, though, we want to use the experience and technology that lies in Paradigm's field, like the flight simulation experience, for example…









Miyamoto-san joined Nintendo in 1977 at the age of 24. His earliest sketches of Mario and Donkey Kong were the seeds of a videogame empire that would grow to epic proportions

Edge What do you think of the next-generation machines?

SM If we look at it simply, or from a pro-user point of view, these machines obviously have certain capabilities. If we look at it more deeply, 32bit and 64bit machines are the same – the programming and development is done in the same way. To master these new technologies will take three to five years. It's the same in the arcades – from the very beginning, three to five years were necessary in order for the newly discovered technology to be mastered. Of course, Nintendo has more than five years' experience in this area. This year, for instance, we don't have any programmers mastering next-generation technology. We think programmers will begin to master it from around spring next year to the same period the year after, and











the products released during that period will reflect that. However, Nintendo has already decided what the themes of these games will be and we also know the Ultra 64 will not use CD-ROM.

Edge So what do you think about CD-ROM?

SM I shouldn't talk about it... Okay, CD-ROM has a big capacity but is very slow. For interactive games, a media format this slow is not so good. People want games with large amounts of data, at a cheap price. For manufacturers of CD-ROM products it's also a good medium because it's not easy to copy. But while production cost in unit terms is very low, the cost of developing the data to fill a CD-ROM is increasing regularly. Thirdparties are not encouraged to make certain types of software on CD-ROM and can be reluctant to develop for it. You do not need high storage support in order to make good games.

Edge Your game styles seem mostly aimed at children, but the videogames market is changing – more and more games are being targeted at adult audiences. Are you going to change your approach?

SM It's difficult to say. First, I want to make games easy to play. I want to make different kinds if games, for adults as well as children. *Mario* was of course primarily



aimed at children but I think the understanding of a game is the same for a child, a specialist in videogames, an old person or even a person who has never played a videogame. A game must appeal to all these types of people, and that's ultimately the kind of game I want to do.

Edge How do you set the difficulty level in a game?

SM As I said, everybody must be able to play it, from the total beginner to the game specialist. This rule is true even if you make a difficult simulation game. The making of a series is the most difficult thing to do. I think the designer of *Dragon Quest* thinks the same way as me. Even a person who has never played *Dragon Quest* must be able to play *Dragon Quest 3*. The producer must think first about the player.

Edge Why are there so few titles available that use the Super FX?

SM The chips are obviously expensive but speed is the main problem. We have developed games but couldn't release them because of lack of speed, but now we are making progress and this year many SFX games will be released. We haven't experienced many problems during the five years that we have been working with the SFX concept.

Edge 32bit machines are widely available in Japan but many consumers seem to be waiting for Ultra 64. Why do you think they should wait?

SM Are they waiting? Well, I think the Ultra 64 will be the cheapest hardware available in the next-generation market. And the Ultra 64 will be the most powerful new systems. I think it's down to software, really. If the system does not have five or six good games available at launch – and if I don't put in my contribution – consumers will buy other hardware.

It's interesting, but I don't know if people really want to play on the Ultra 64, in the same way that I don't know whether existing 16bit hardware isn't sufficient for the player anyway. Sony and Sega are insisting that the market exists but historically Nintendo is the only company that has sold more than ten million units of hardware. The claim that Sony or Sega would be able to sell as much hardware as Nintendo sounds uncertain. With these ten million units we gained much experience and saying that another company will be able to talk on the same terms seems strange to me. The main problems for Sega and Sony are in actually identifying that the market exists, and in believing that they can reach the ten million mark. The mass media analysis also amuses me – they say that history always repeats itself, but it is simply too early to say whether it is yet right for a 16-bit owner to go out and buy a 64bit machine.



Send your **questions** to Q&A, **Edge**, 30 Monmouth Street, Bath, Avon BA1 2BW

Q At the moment I have an Amiga 1200 and a Super Famicom, and will be getting a PlayStation soon. I'm also considering a 386/486 PC to run educational titles for my four-year-old and also the odd game and utility for myself. As PlayStation development is PC-based, is there much chance of straight ports of games such as *Little Big Adventure*, *Ecstatica* and *Discworld* appearing? If this is the case, ports of educational titles would give us mature gamers (whom I imagine the next-generation consoles will initially be aimed at) an excuse to the wife for buying another console, and save me buying a PC.

John Hill, Stoke-on-Trent

A The titles you mention are exactly the type of games likely to cross over from PC to PlayStation, and new versions of both are on their way. PC developers are keen to maximise the potential of an 'instant' platform for relatively straightforward conversions, and many teams – like Psygnosis – are developing all future products for both PC and PlayStation.

Q In **Edge** 11 you stated that the Saturn 32X could handle 50,000 polygons per second, and in issue 15, in the *Fight For Life* preview, I read that the Jaguar could process 24,000 polygons per second. So why is *Doom* in a smaller window on the 32X than it is on the Jaguar?

Guido I Buccolo, Buenos Aires, Argentina

A As previously stated in **Edge**, polygons-per-second claims can't be taken at face value simply because there's no benchmark for polygon dimensions or complexity to qualify them. This means that manufacturers can get away with huge counts which are often misleading.

Q Now that I've decided to buy a PlayStation, I thought I might as well buy a high-quality television. While scanning my collection of **Edge** for information on video outputs, I came across contradictory information. In Q&A, issue 7, you stated: 'You'll get an even better picture [than SCART] through an S-Video socket.' Then in **Edge** 10 you said: 'S-VHS provides a good output but RGB SCART will always provide a better picture.' Could you clarify which gives the best output? I know you've already covered the subject, but if I'm spending £500+ on a TV I want the best possible picture. What do you run your own PlayStation through?

Peter Saunders, Liverpool



Is Atari planning a replacement for the unloved Jaguar pad? (See Jeremy Norton's letter)

A At the moment, your best bet is to use the S-VHS/S-Video socket. Most new TVs have a dedicated socket on the front of the unit, which gives much easier access than the SCART input at the rear of the TV. A decent S-VHS lead costs a fiver from Dixons or Tandy, whereas the dedicated SCART lead is £30 and only available on Japanese import. However, the S-VHS option will only work with TVs that can handle a pure NTSC input, so be sure to check this beforehand.

The difference between S-VHS and SCART picture quality is only really noticeable with broadcast-quality images; both options are a major improvement over composite video.

Q Your mention of software encryption to prevent imported software working on non-native hardware has caused me to reconsider my plan to buy an import PlayStation. As an ex-Neo-Geo stalwart, this is an issue I have not previously faced. It concerns me that early adopters are tying themselves to a future of buying imports. On a similar note, which version (UK or US) does **Edge** recommend for users with an S-VHS, NTSC-compatible monitor? Moreover, how does Sony intend to tackle the slowdown issue related to 50Hz PAL TVs? Finally, does Sony have a Web site?

Lester Britton, Maidenhead

A Yes, early adopters will have to depend on imports if territorial control is enforced to the degree which next-gen manufacturers intend. But it's still too early to say whether anti-import systems will be insurmountable.

Sony is aiming to produce games in UK format that take advantage of a fullscreen PAL image, so a UK machine will be just as worthwhile a system as an import version is right now.

Sony's new site can be found on www.sony.com.

Q 1. I want to get a 3DO but I'm having problems deciding which format to buy. The release of games from US to UK is excellent (in terms of speed of translation) but I



PC games like *LBA* could well appear on the PlayStation (see letter from John Hill)

don't want to spend $400 on a machine with a letterbox display.
2 If Namco wants to get back at Nintendo, why is it making 32-meg RPGs for the SFC now that the PlayStation and Saturn are available?
3 Are *Daytona USA* and *Virtua Fighter* coming out for the 32X?

Kelly Coleman, Sittingbourne

A **1.** All consoles available in this country have to operate at 50Hz (rather than the US 60Hz) because there are more lines in the PAL display. To negate the 17% difference in scan speed, many UK consoles run in a letterbox. A US 3DO will run fullscreen, fullspeed on any multistandard TV (ie one capable of displaying NTSC); The PAL UK 3DO will run fullscreen through an RF connection with a PAL disc is played but in a letterbox with an NTSC disc.
2. The SFC is still by far the most popular console in Japan, and Namco simply can't afford to ignore such a significant market.
3. *Virtua Fighter* is currently in production, but *Daytona*, because of its huge hardware demands, won't be appearing on the 32X. The good news is that *Return Fire* and *FIFA Soccer* are said to be in the pipeline.

Q and A

You can rely on Edge to cut through the technobabble and give you straight answers. Write to: Q&A, Edge magazine, 30 Monmouth Street, Bath, Avon BA1 2BW. Alternatively, fax us on 0225 338236, or e-mail us at edge@futurenet.co.uk.

Edge regrets that it can't answer questions personally, either by phone or by post.

next **month**

M2

Next issue **Edge** delivers the lowdown on M2, the hardware accelerator that could easily transform the 3DO into the world's most powerful home games system. **Edge** has the first evidence of what the system is capable of and talks to developers about its potential.

Plus: **Edge** hacks through the RPG scene and showcases the first 32bit titles striving for honour in Japan's fiecely competitive RPG market. And top developers Square Soft and Enix reveal the secrets behind their phenomenal success.

Also with **Edge** 22: a special 16-page supplement devoted to the Atari Jaguar. Expect a full appraisal of the machine, a rundown on thirdparty developers supporting the console, and the very latest software. And the company's boss, Sam Tramiel, talks candidly to **Edge** about its plans for the future.

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Thursday 25 May

